

Silver Line Gateway

Service to Chelsea, East Boston & the Blue Line

Single Environmental Impact Report (Single EIR) **EEA # 15124**



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1 Introduction

The Massachusetts Department of Transportation (MassDOT), in coordination with the City of Chelsea, Massachusetts Bay Transportation Authority (MBTA) and the City of Boston, is proposing to construct the Silver Line Gateway project.

The purpose of this project is to extend Silver Line Bus Rapid Transit (BRT) service from South Station and the Seaport District in Boston to Chelsea and East Boston to address the identified transit access needs of the corridor, while enhancing livability and economic development potential for these communities. The existing Silver Line serves the Logan Airport terminals in East Boston, but does not currently serve Chelsea, the East Boston neighborhood, or the existing Airport Blue Line Station.

Transit improvements in the Study Area are well aligned with MassDOT's goals that encourage mode shift from single occupant vehicles to transit, transit connectivity with environmental justice populations, and GreenDOT policies designed to improve air quality and healthy transportation initiatives, and will leverage many recent major transportation investments, including the Silver Line Transitway Tunnel, I-90 Williams Tunnel, Airport Blue Line Station, Coughlin Bypass Road, Chelsea Street Bridge, and the purchase of the former Grand Junction Railroad right-of-way (ROW) by the Commonwealth, which crosses through the center of Chelsea. The Preferred Alternative (Alternative 1, the Busway to Mystic Mall), is projected to have 8,730 daily riders by the year 2035, which includes 2,500 net new transit trips.

The proposed Silver Line Gateway service will provide a new BRT route, and will operate in addition to the existing Silver Line routes. It will utilize existing Silver Line infrastructure and overlay existing service from South Station through the Seaport District of Boston, including all SL1 station stops in South Boston (Courthouse, World Trade Center, and Silver Line Way), and through the Williams Tunnel to East Boston, where Silver Line Gateway will head north and west, providing new BRT service for East Boston and Chelsea. The East Boston neighborhood will be served with a stop at the Airport Blue Line Station bus curb. Silver Line passengers from Chelsea will be able to reach the Logan Airport terminals via connections with existing airport passenger shuttle buses serving Airport Blue Line Station. The focus of the previously completed Alternatives Analysis, Expanded Environmental Notification Form (EENF), and this Single EIR is directed at the major new construction components of the project, which occur entirely in Chelsea. The previously completed Alternatives Analysis was included in the Expanded ENF.

Three Build Alternatives were reviewed and summarized in the Expanded ENF. In all of the proposed alternatives, the new Silver Line service will depart from South Station and mirror the existing Silver Line service in the Seaport District. It will reach East Boston via the Williams Tunnel to the Blue Line Airport Station. From there, vehicles will enter the Coughlin Bypass Road and then cross the new Chelsea Street Bridge into Chelsea. Within Chelsea, two basic route choices were evaluated and compared:

- (1) **Busway alternatives** that would move more quickly and reliably in a dedicated alignment right-of-way, with an option to serve Bellingham Square;
- (2) **On-Street alternatives** that would use Central Avenue to reach Bellingham Square with a variety of ways to speed up the service, including transit signal priority and dedicated bus lanes in key locations.

Alternative 1, the Busway to Mystic Mall Alternative, would direct Silver Line buses to a new exclusive busway on the former railroad right-of-way after crossing the Chelsea Street Bridge and entering the Massport employee parking garage bus loop off of Central Avenue. Alternative 1 includes four proposed BRT stations in Chelsea: Eastern Avenue Station, Box District Station, Downtown Chelsea Station, and Mystic Mall Station.

Alternative 2, the Busway to Bellingham Square Alternative, will direct Silver Line buses to the new busway after crossing the Chelsea Street Bridge and entering the Massport employee parking garage bus loop, similar to Alternative 1. The buses would follow the busway until turning left at Chestnut Street into the Bellingham Square area, and looping around Chelsea City Hall via Washington Avenue and Broadway. This alternative is shorter than Alternative 1 and would have three proposed stations in Chelsea: Eastern Avenue Station, Box District Station and Broadway Station.

Alternative 3, the On-Street to Everett Avenue Alternative, would use Chelsea city streets with short sections of dedicated lanes in some portions of the route. Innovative features would be needed to reduce the frequency of buses being delayed in general traffic, including contraflow lanes and bus queue jump lanes or full bus lanes in downtown Chelsea. Alternative 3 would include four proposed stations in Chelsea: Central Avenue at Eastern Avenue (near the Massport employee parking garage), Central Avenue at Highland Street, Hawthorn Street Outbound Station (at Bellingham Square), Hawthorn Street Inbound Station (at the intersection of Hawthorn and Park Streets), and on Spruce Street near MGH. Each station would have inbound and outbound terminals.

A comparison of impacts and benefits included in the Expanded ENF determined that Alternative 1, the Busway to Mystic Mall, would be advanced as the Preferred Alternative in this Single EIR.

The overall study area and the Preferred Alternative are shown in Figures 1-1 and 1-2, respectively.

In accordance with MEPA regulations at 301 CMR 11.05(7) and 301 CMR 11.06(8), an Expanded ENF was submitted on November 15, 2013. On December 27, 2013, the Certificate of the Secretary of Energy and Environmental Affairs (EEA) on the EENF was issued. Pursuant to the MEPA M.G.L. c.30, ss. 61-62 I and Section 11.06 of the MEPA regulations 301 CMR 11.00, the Silver Line Gateway project requires the preparation of a mandatory Environmental Impact Report (EIR). Pursuant to 301 CMR 11.11, EEA has allowed the submission of a Single EIR. The Secretary's Certificate is provided in Chapter 9.

The format of this Single EIR follows the scope contained in the Secretary's Certificate. After this introduction, a project description chapter (Chapter 2) is provided that describes updates to each of the project elements since the filing of the Expanded ENF. Chapter 3 provides updated information on wetlands, including mitigation for permanent alteration of isolated wetlands noted in the Expanded ENF. Chapter 4 focuses on stormwater management and how the project will satisfy the MassDEP Stormwater Management Policy and Standards. Comments regarding potential infrastructure impacts are addressed in Chapter 5, and additional information on project-related greenhouse gas emissions is provided in Chapter 6. Construction management plan elements are provided in Chapter 7, including an update on the results of soil sampling for hazardous materials. Mitigation measures are identified in Chapter 8, and Chapter 9 provides responses to comments in the annotated letter format. Finally, Chapter 10 provides the Silver Line Gateway Single EIR distribution list. A Technical Appendix is provided (on CD) containing construction plans, the joint 401/404 Permit Application to MassDEP and the U.S. Army Corps of Engineers, stormwater management calculations, and other relevant plans and technical data.

Figure 1-1: Overall Study Area



Figure 1-2: Preferred Alternative



2 Project Description

From the Secretary's Certificate on the Expanded ENF:

"The Single EIR should include a thorough description of the entire project and all project elements and construction phases, in clear, non-technical language. The Single EIR should clearly describe any changes to the project since the filing of the ENF. The Single EIR should include an existing conditions plan that clearly locates and delineates project elements, wetland resource areas, and adjacent land uses. The Single EIR should include proposed conditions plans illustrating proposed cross-sections and elevations, structures, stormwater management systems, and utility connections associated with the project."

2.1 Introduction

A thorough description of the Silver Line Gateway (SLG) project begins with identification of the distinct elements of the project. As described in the Expanded ENF, those components are the SLG Busway / Bus Rapid Transit (BRT) service, the MBTA Chelsea Commuter Rail Station relocation, the Chelsea shared-use path, and the Washington Avenue Bridge replacement. These project elements are illustrated in Figure 2.1-1.

The project will be constructed in two separate phases. The Phase I work will be constructed under a MassDOT Highway Division Contract, and includes the SLG Busway, the Eastern Avenue, Box District and the Mystic Mall BRT Stations, the shared-use path and the Washington Avenue Bridge replacement. The Phase II work will be performed under a separate MBTA Construction Contract, and includes relocation of the Commuter Rail Station and decommissioning of the existing Commuter Rail Station, and construction of the Downtown Chelsea BRT Station, and the busway traffic signal systems. The relocated Commuter Rail Station will be designed and constructed in accordance with the latest Americans with Disabilities (ADA) regulations.

2.2 Changes since EENF Filing / Proposed Conditions

2.2.1 Overview

Since the filing of the Expanded ENF on November 15, 2013, continued progress and coordination has occurred on the design of the Silver Line Gateway and its components. Figures 2.2-1 through 2.2-9 provide updated illustrations of each of the components within the context of the overall Chelsea project site, adjacent land uses and street network, as well as to one another. Wetland areas are also shown on Figures 2.2-7 and 2.2-8. Updated descriptions of the status of each of the project elements (Busway, Commuter Rail Station relocation, shared-use path and Washington Avenue Bridge replacement) are provided in the following pages.

Figure 2.1-1: Project Elements

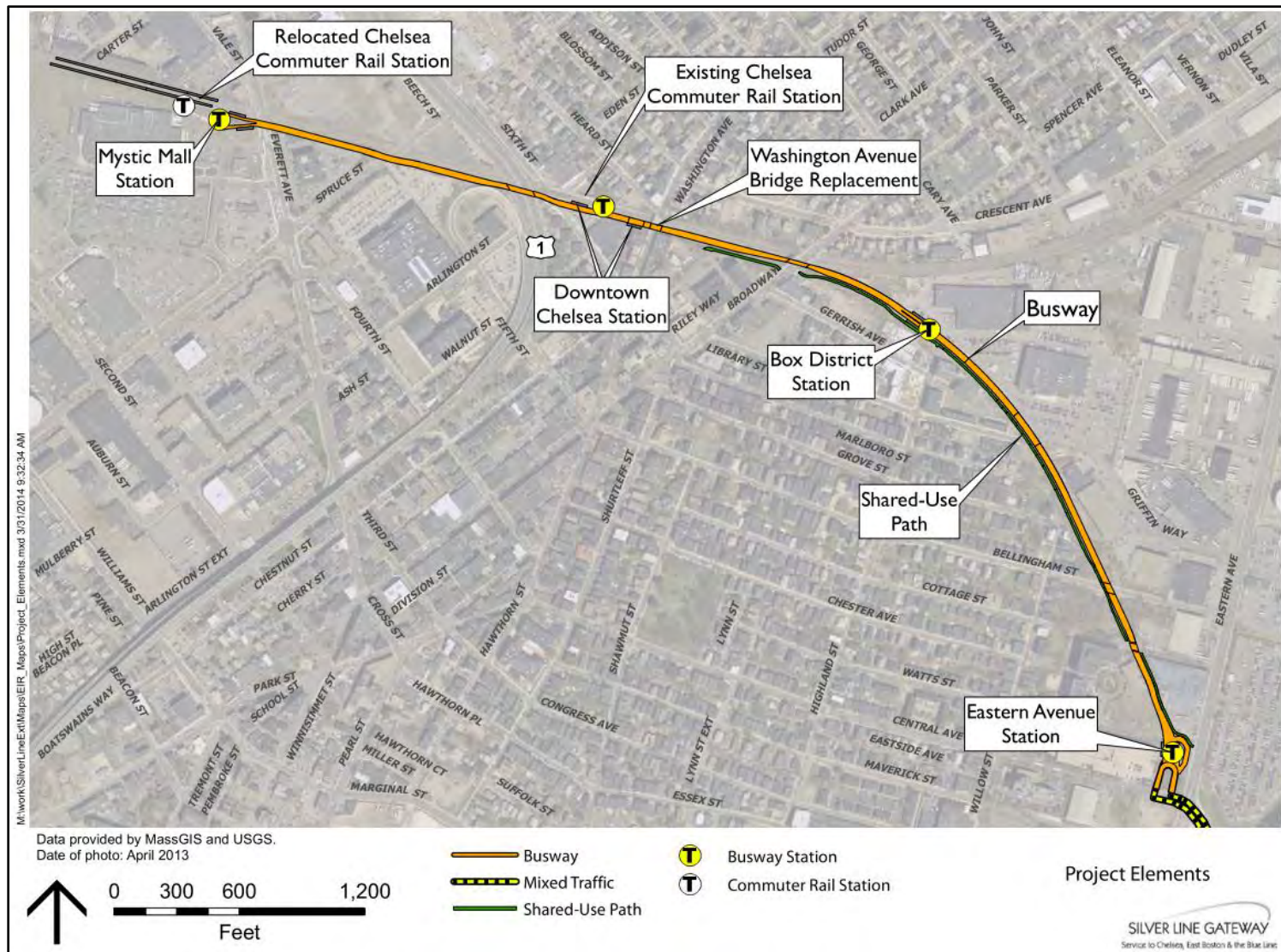


Figure 2.2-1: Updated Project Elements (Sheet 1 of 9)

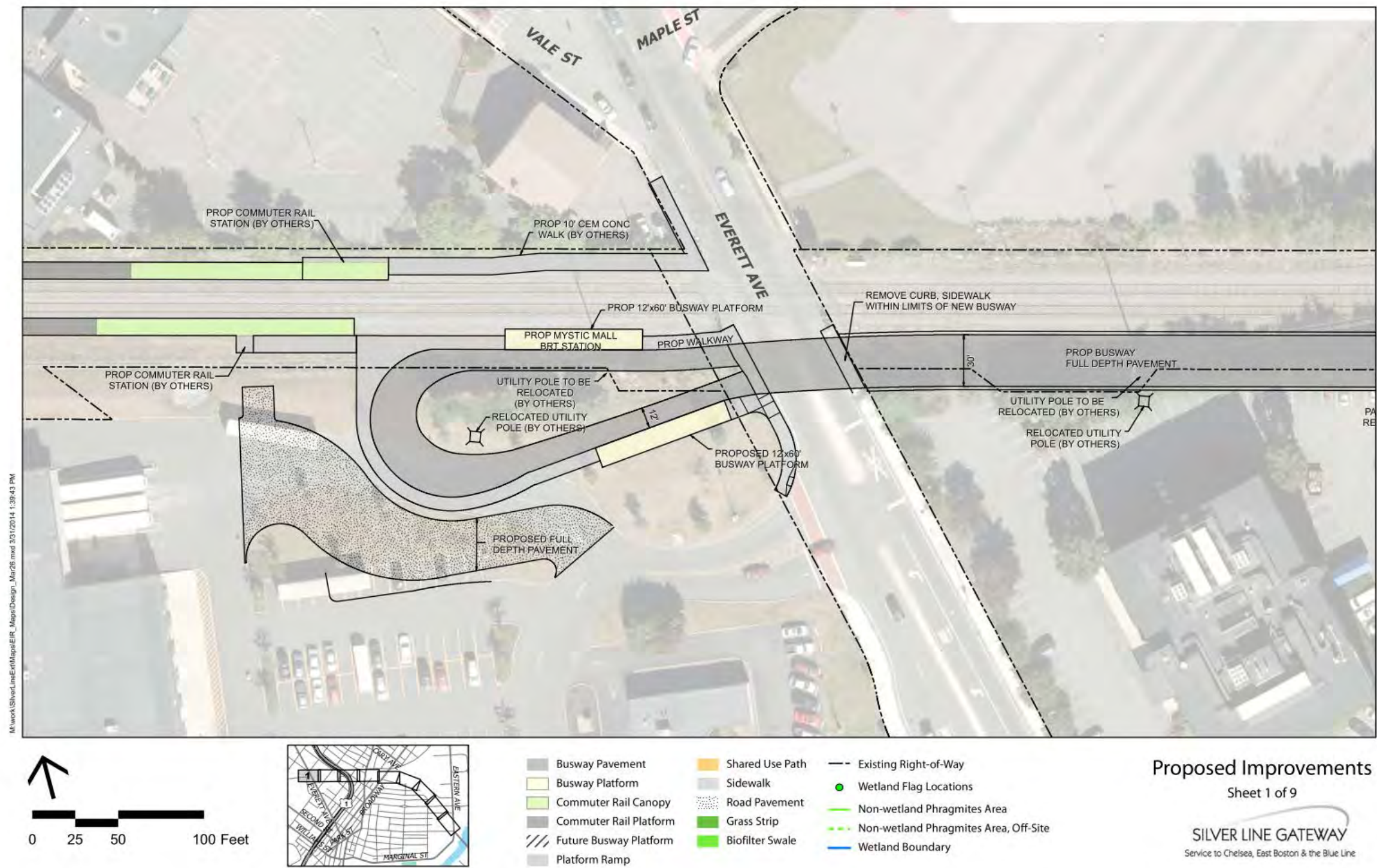


Figure 2.2-2: Updated Project Elements (Sheet 2 of 9)

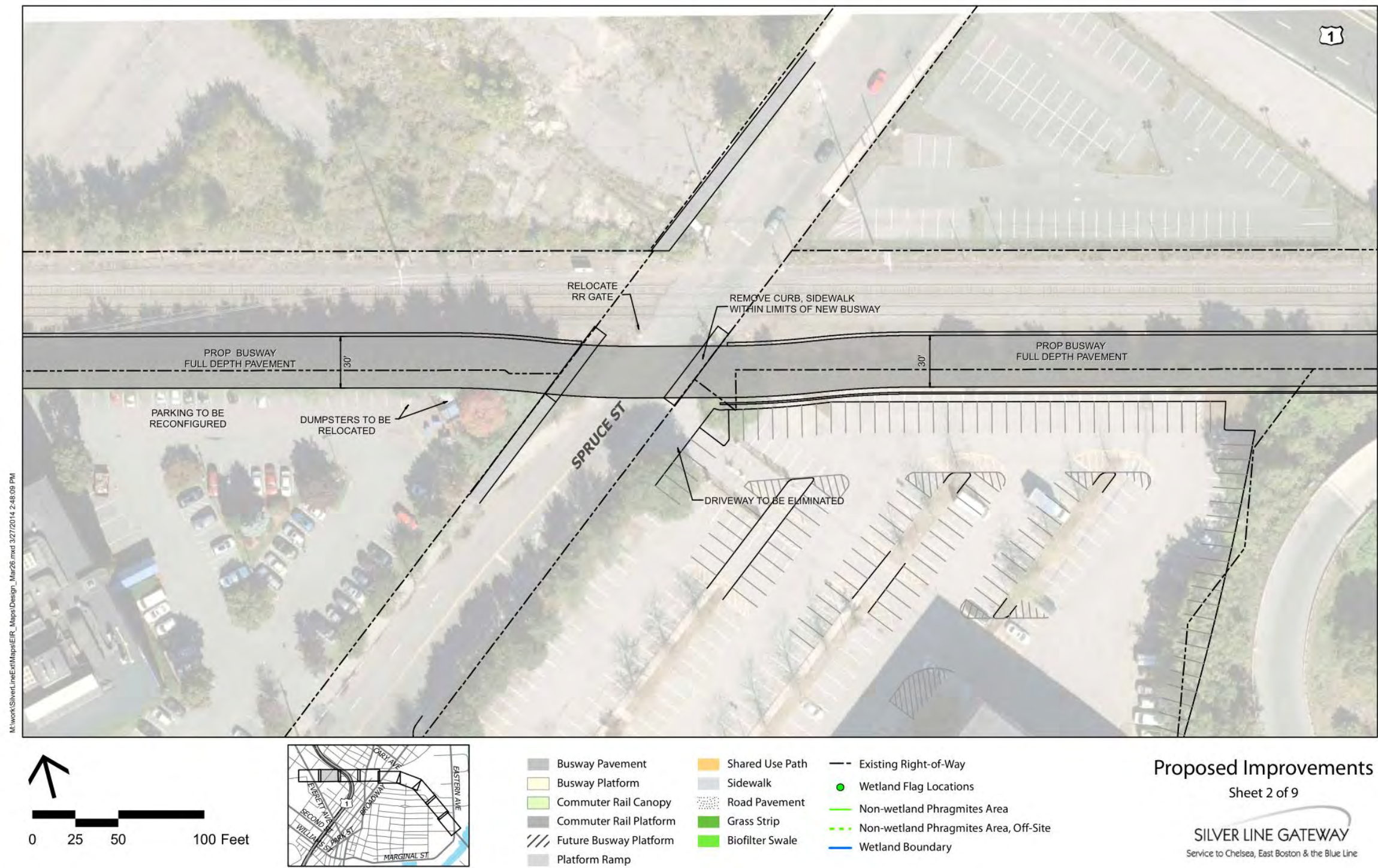


Figure 2.2-4: Updated Project Elements (Sheet 4 of 9)

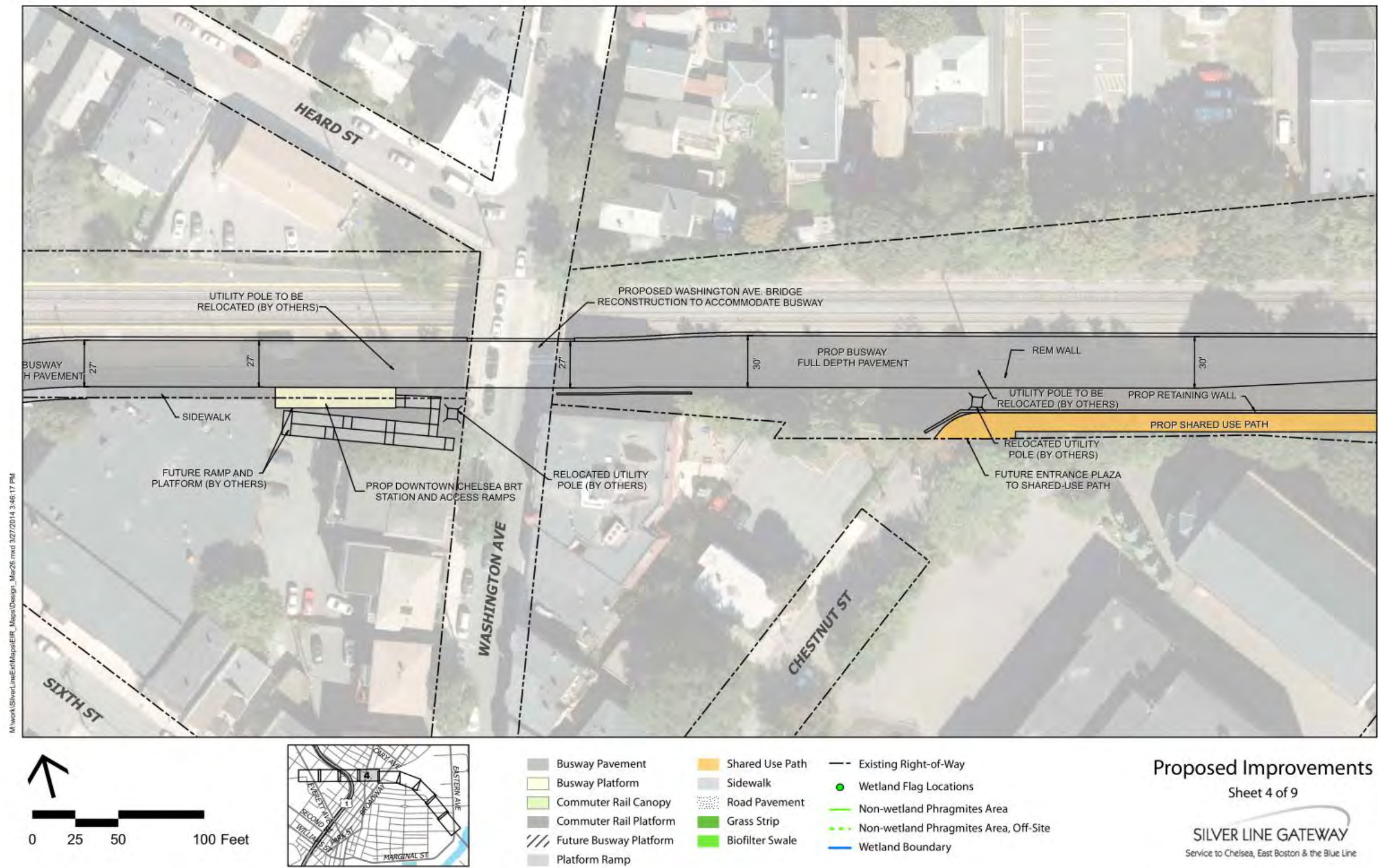


Figure 2.2-5: Updated Project Elements (Sheet 5 of 9)

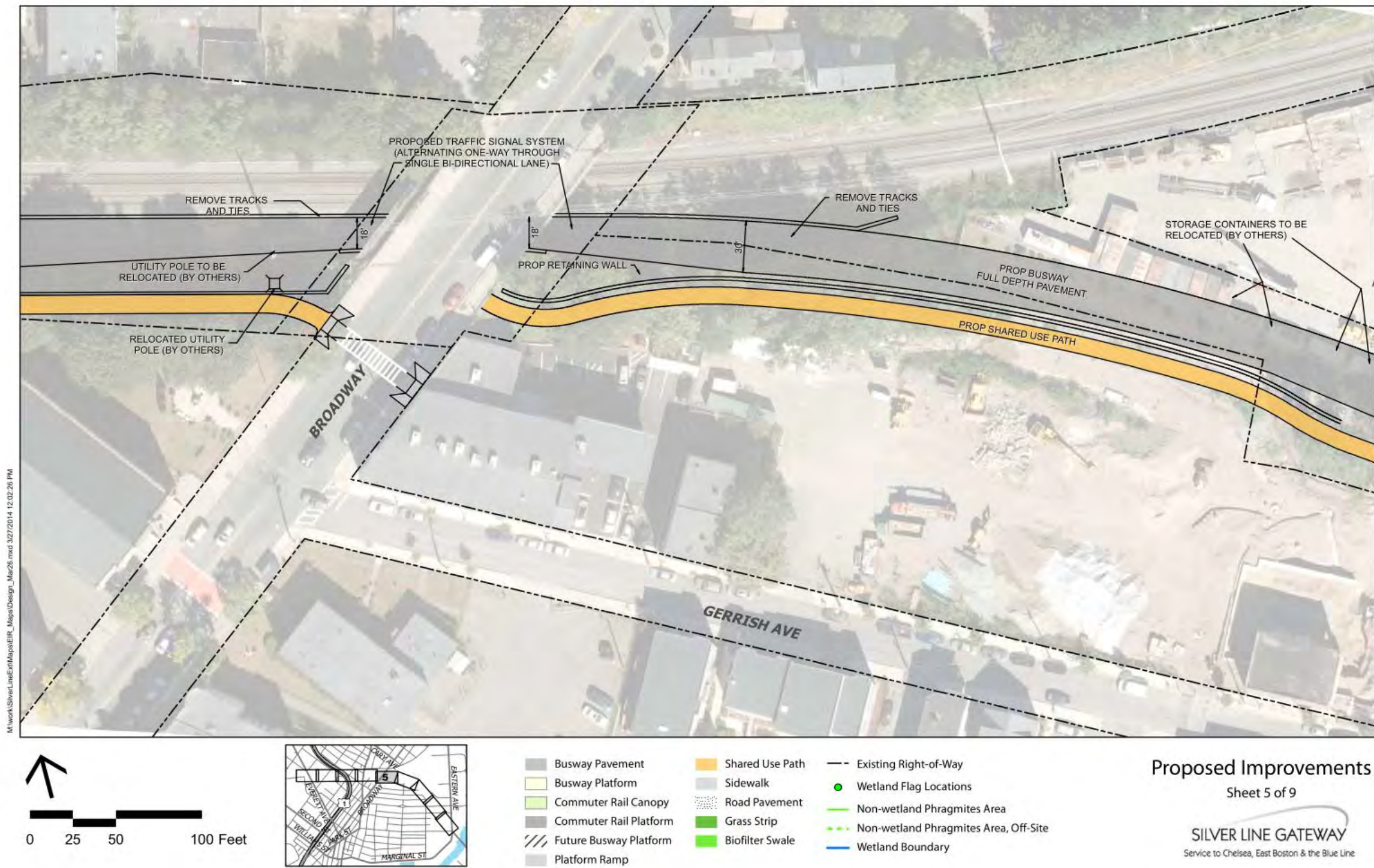


Figure 2.2-6: Updated Project Elements (Sheet 6 of 9)

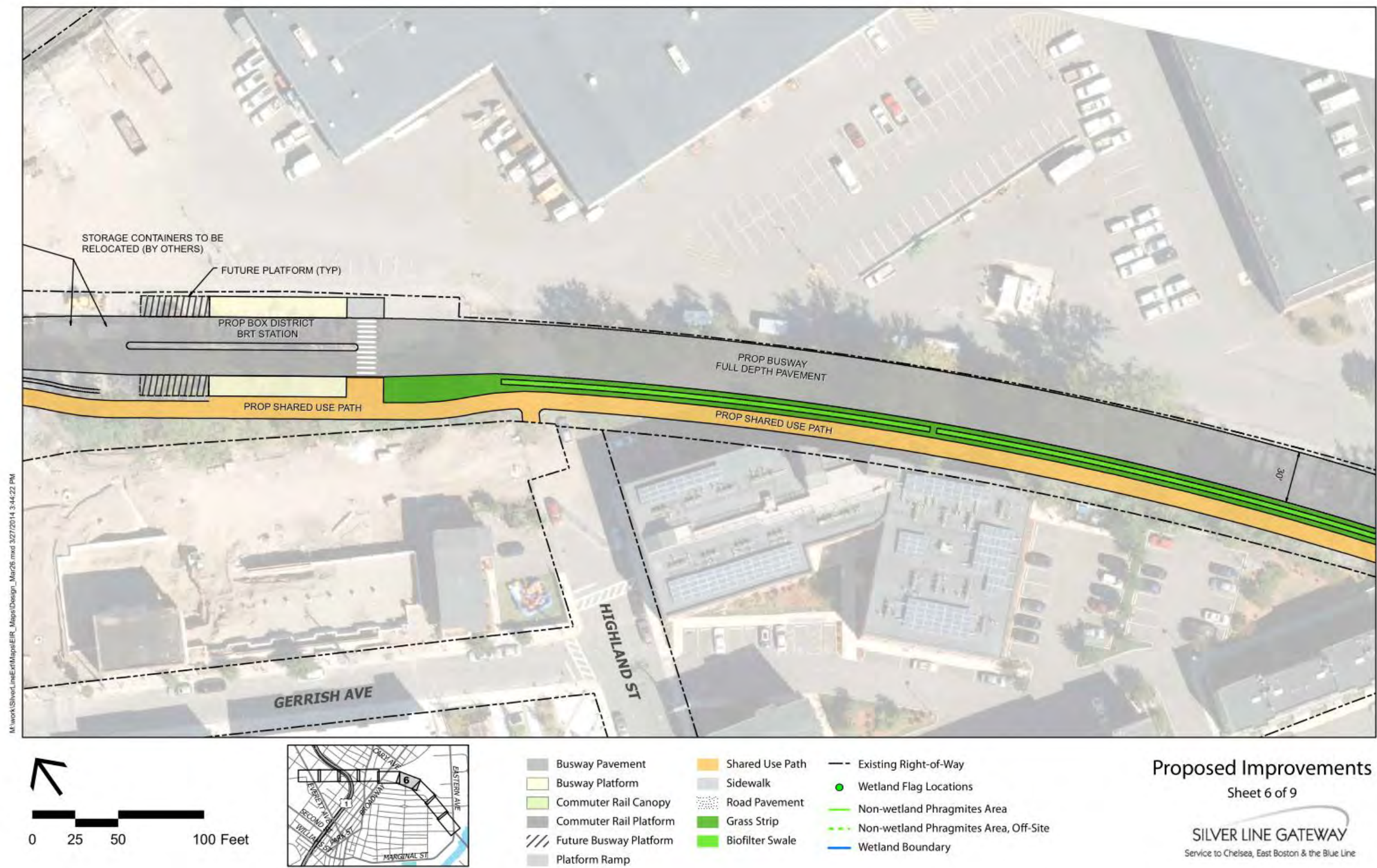


Figure 2.2-7: Updated Project Elements (Sheet 7 of 9)

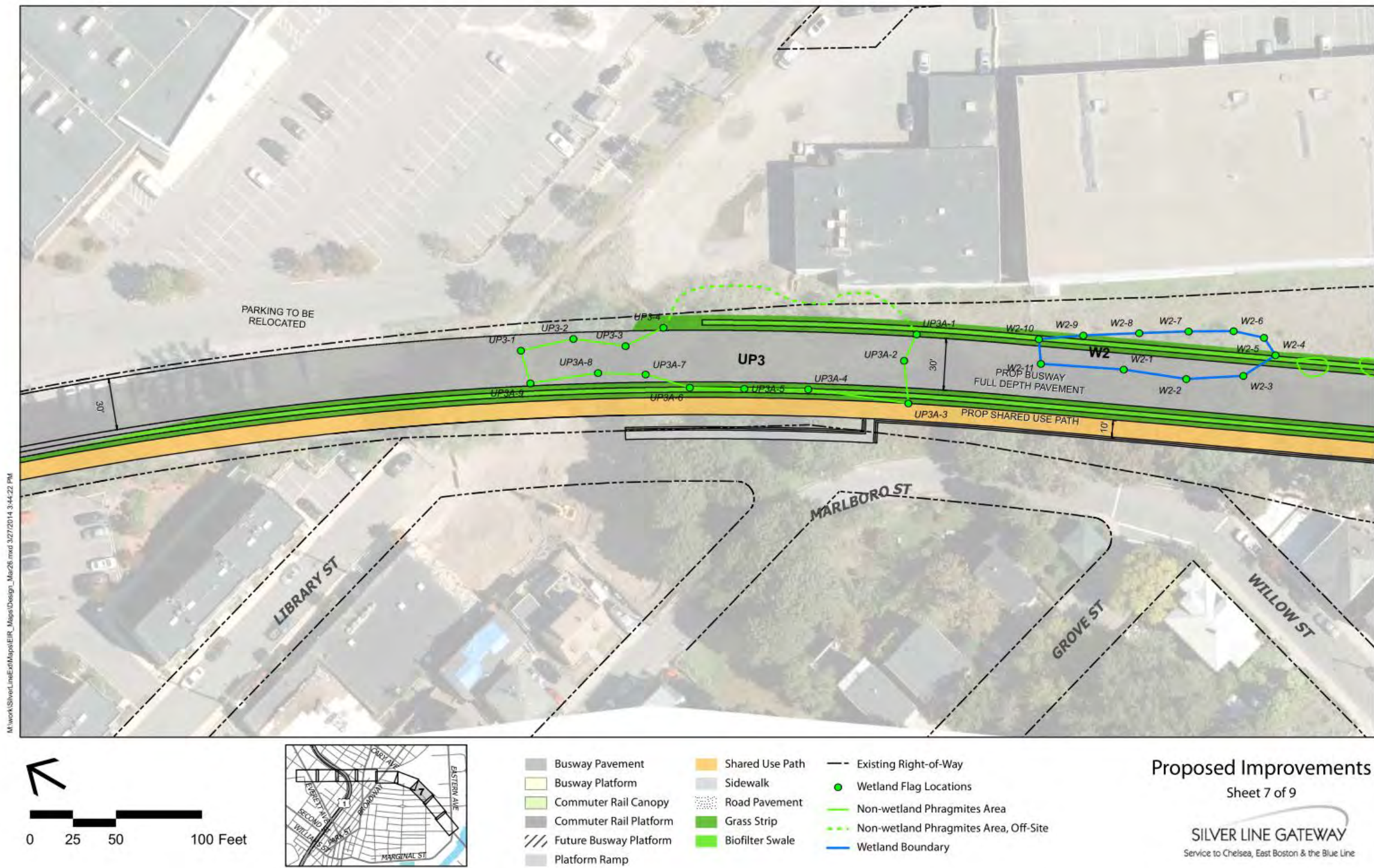


Figure 2.2-8: Updated Project Elements (Sheet 8 of 9)

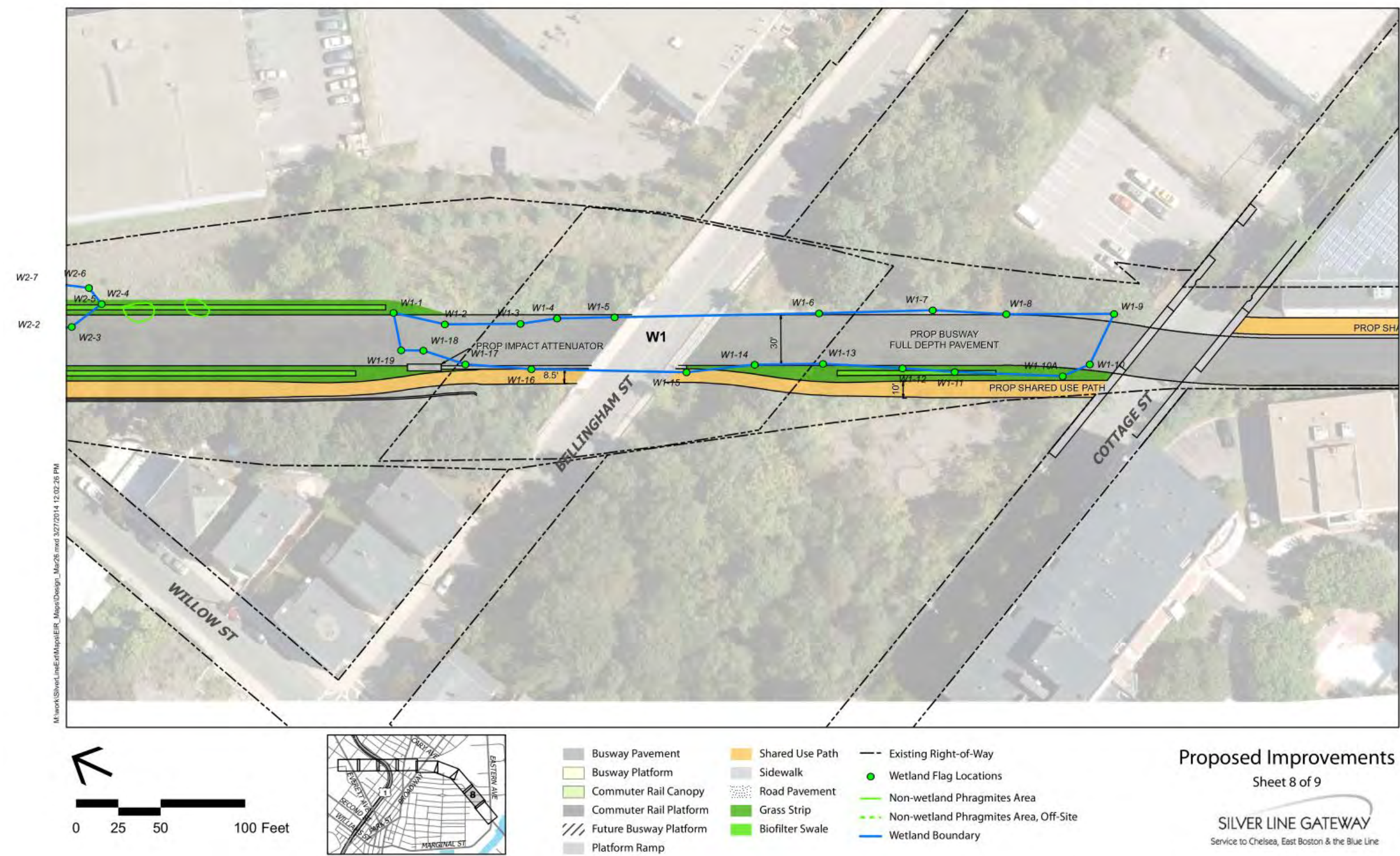
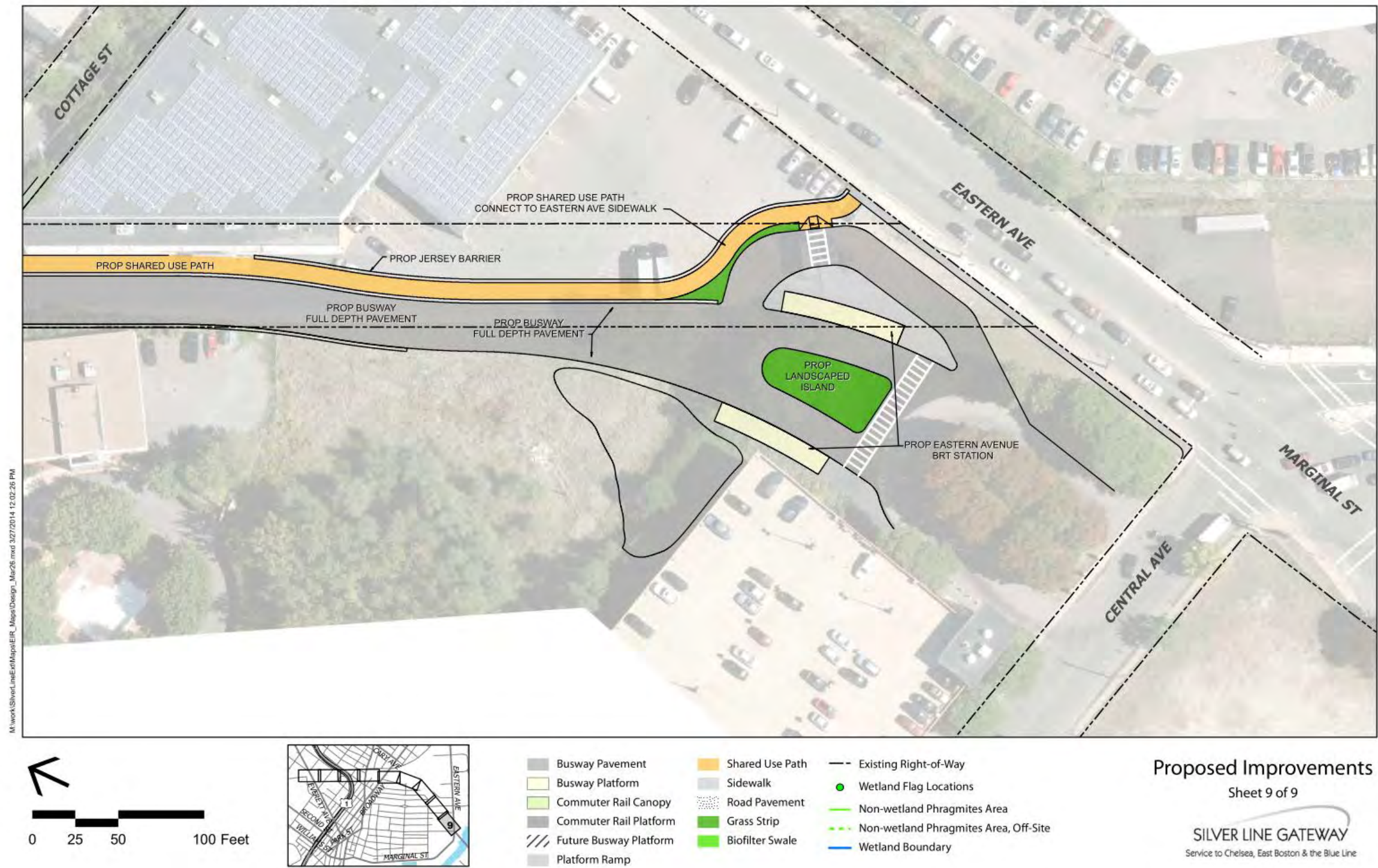


Figure 2.2-9: Updated Project Elements (Sheet 9 of 9)



2.2.2 Busway / BRT Update

South of Chelsea

There have been no substantial changes to the project elements south of Chelsea since the filing of the Expanded ENF. Plans to utilize existing Silver Line elements are still valid, and there are no changes to proposed routing and service.

It is anticipated that during the final design process prior to implementation of the proposed service, new wayfinding signage will be developed to modify existing Silver Line route and station signage between South Station and Chelsea to reflect the Silver Line Gateway service.

Transit Signal Priority

Since the filing of the Expanded ENF, further research and analysis has been conducted on the implementation of Transit Signal Priority (TSP) at all existing signalized intersections on the Silver Line Gateway route. TSP is a tool that improves BRT service, reliability and operating efficiency in the form of signal designs that give BRT vehicles green-time priority. TSP has been successfully implemented for many BRT projects and has shown significant reductions in transit travel time with little or no effects on competing vehicle traffic. TSP design considers pedestrians, bicyclists, street geometry, cross street queuing, and the impact on adjacent intersections. Two main approaches exist for providing TSP - passive and active systems.

In a passive TSP system the traffic signal timing is set to enable BRT vehicles to progress through a corridor more efficiently. Passive TSP includes a set timing plan and does not account for individual BRT vehicles. SLG will consider passive systems as a first step for implementing BRT as the analysis can identify outdated timing plans and provide a “base-case” for comparing active systems. Due to high traffic volumes in South Boston, passive methods will likely be used at those intersections.

In an active TSP system, traffic signal plans can be adjusted in real time based on the expected arrival of the BRT vehicle at the intersection. First, the BRT vehicle is detected upstream of the intersection. Next, the detector, often an induction loop, sends a signal to the traffic controller computer to decide if a signal timing plan change can be implemented. Finally, if a plan change is implemented, the BRT vehicle passes through the intersection where it is again detected to notify the controller to return to the regular signal plan. Active TSP systems in other BRT projects have significantly reduced BRT route travel times. Active TSP will allow BRT vehicles to pass through East Boston and Chelsea more efficiently, with few or no negative effects on competing traffic.

Active TSP signal timing changes may depend on conditionality rules, i.e. the BRT schedule and relative location to other BRT vehicles on the route. For example, the BRT vehicle may not trigger a signal timing plan change if it is on or ahead of schedule. These conditionality rules are typically applied system-wide, not just to a single intersection.

Signal timing adjustments for active TSP allow the BRT vehicle to get a green light more often without a significant impact on competing vehicle traffic. Possible signal timing plan changes include:

- Green extension - detectors are located to identify BRT vehicles that would miss the green light by a small margin and trigger an extended green time allowing the BRT vehicle to clear the intersection rather than waiting through an entire red interval.

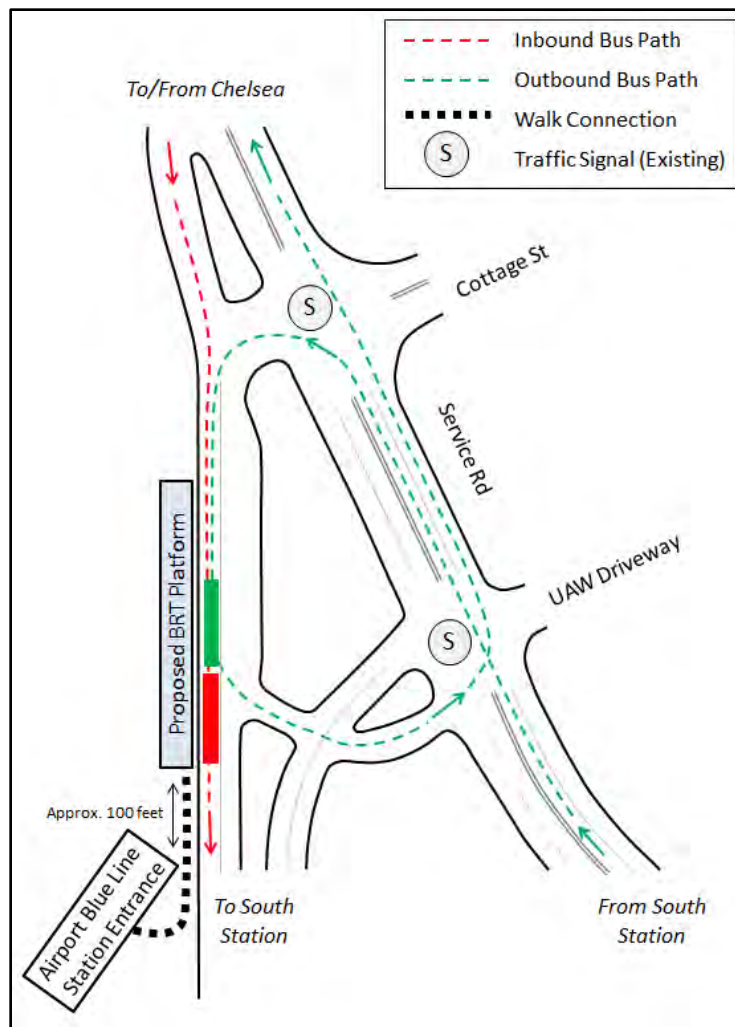
- Early green - this strategy is used to shorten the conflicting phases whenever a BRT vehicle arrives at a red light in order to return to the BRT vehicle's phase sooner. The conflicting phases are shortened by a predetermined amount, often to their minimum green time, to return to the transit movement more quickly.
- Phase rotation - the order of phases at an intersection can be shuffled so that BRT vehicles arrive during the phase they need. For example, if the cross street normally has a lagging left phase, but that phase would detain the BRT vehicle, the lagging left is rotated to become a leading left for the next cycle.
- Phase insertion - this strategy allows a signal controller to return to a critical phase more than once in the same cycle if BRT vehicles that use that phase are detected. For example, if a left-turning BRT vehicle arrives at an intersection after the left turn phase has been served, the signal can insert a second left turn phase before proceeding to serve the side street.
- Actuated transit phase – this is for transit vehicle-only movements. These might be seen on dedicated bus lanes, where transit vehicles are allowed to make movements that general traffic is not, such as the Coughlin Bypass Road in East Boston, or at the entrances and exits to BRT stations.

The analysis of both TSP types may result in other intersection changes such as lane configurations, pedestrian crossings, signage, and other signal plan changes. Further analysis will occur prior to project implementation on which TSP option will be included. The implemented changes will provide safe and efficient movement for BRT vehicles as well as general vehicle and pedestrian traffic.

Airport Blue Line Station BRT Platform Location Update

The proposed configuration of the Silver Line Gateway BRT platform at the Airport Blue Line Station remains as described in the Expanded ENF. The general location of the Silver Line Gateway BRT platform and the Silver Line Gateway vehicle route configuration at the Airport Blue Line Station are shown in the updated Figure 2.2-10. The red dashed arrow indicates the direction of the inbound Silver Line Gateway vehicles. Similarly, the green dashed line indicates the direction of outbound Silver Line Gateway vehicles. The outbound (toward Chelsea) vehicles would need to use the northernmost portion of the platform area to enable them to continue to Chelsea by looping the block as shown. The inbound (toward South Station) vehicles can use the portion of the platform closest to Airport Blue Line station entrance and will continue south on Transportation Way and Harborside Drive to reach the Williams Tunnel.

Figure 2.2-10: Silver Line Gateway BRT Platform at Airport Blue Line Station



Chelsea

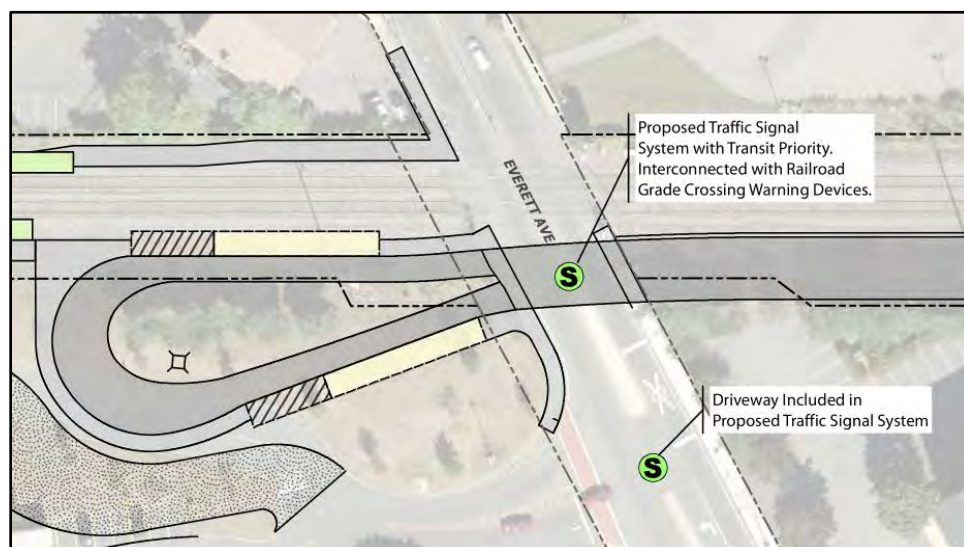
Busway Alignment Issues and Solutions

- Everett Avenue

The busway will cross Everett Avenue just north of the Mystic Mall/Market Basket northern driveway as shown in Figure 2.2-11. Mystic Mall is where the BRT terminal station will be located to the west of Everett Avenue. The BRT station will have inbound and outbound platforms for passenger loading/unloading and a turnaround loop for buses to layover and reverse direction. The Market Basket parking lot and circulation aisle in this area will be reconfigured to provide for the turnaround loop with the net loss of approximately ten parking spaces. The BRT station will also provide convenient transfers with the relocated Chelsea Commuter Rail station. The BRT platform will be directly connected to the east end of the outbound commuter rail platform, and the inbound commuter rail platform will be easily accessed with the upgraded at-grade sidewalk crossing at Everett Avenue, allowing for easy transfers in either direction. The busway construction will also include reconstruction of the existing railroad crossing at Everett Avenue.

Two new signals will be evaluated and implemented on Everett Avenue - one at the BRT busway and one at the northern Market Basket driveway. Both signals are expected to be equipped with Transit Signal Priority (TSP) technology, allowing them to detect when a BRT vehicle is approaching and update the signal timing plans to give BRT vehicles green time when possible. TSP also allows these signals to be coordinated with the commuter rail and railroad warning crossing devices so that when a train is in proximity of the intersection, buses may pass through parallel to the tracks, but not vehicles, pedestrians, or bicyclists on Everett Avenue. When the busway has a red light, pedestrian crossing protection is provided on both sides of Everett Avenue across the busway and rail tracks. Both signals will coordinate to control the flow of traffic in and out of the Market Basket site, giving Everett Avenue green time, except when a bus or train is approaching. When the busway signal is red for Everett Avenue, vehicles traveling on Everett Avenue north will be able to make a left into Market Basket, and vehicles traveling out of Market Basket will be able to make a right on Everett Avenue southbound. Everett Avenue in the vicinity of the at-grade crossing operates at Level of Service (LOS) A, with little to no delay. Analysis indicates it will continue to operate at LOS A with the proposed busway, TSP, and related improvements.

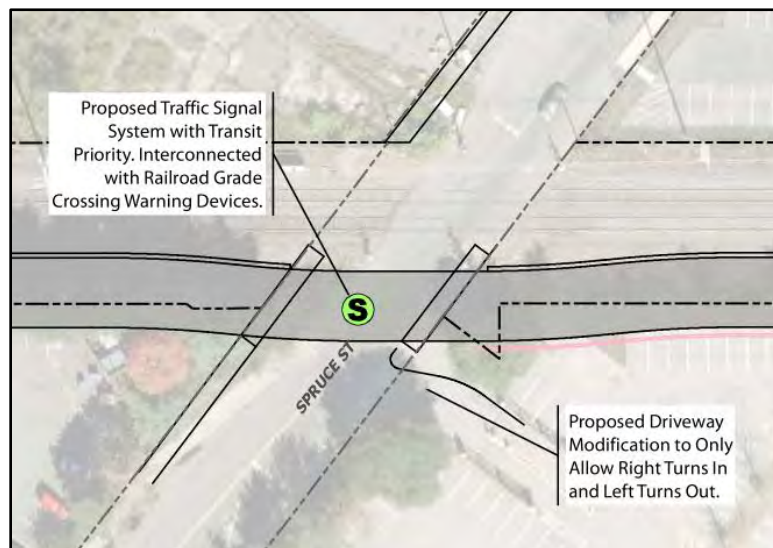
Figure 2.2-11: Proposed Intersection Improvements at Everett Avenue



- Spruce Street

The busway will cross Spruce Street just south of the commuter rail tracks and just north of the Massachusetts Information Technology Center (MITC) driveway as shown in Figure 2.2-12. Construction of the busway will necessitate removal of a small section of sidewalk on the east side of Spruce Street as well as the relocation of the southern railway crossing arm and parking lot dumpster storage. The busway construction will also include reconstruction of the existing railroad crossing at Spruce Street. The MITC parking lot entrance will be relocated due to close proximity of the busway. The new traffic signal, equipped with TSP, will be analyzed and implemented, and would rest on green for Spruce Street, only turning red when a bus or train is approaching. The signal gives pedestrian protection when no train or BRT vehicle is approaching. MITC parking spaces impacted by the busway and the driveway relocation will be replaced by reconfiguring the layout of the parking spaces and circulation aisles resulting in little or no net loss of parking. The reconfiguration of the parking lot will not impact truck loading within the MITC site. Spruce Street in the vicinity of the at-grade crossing operates at Level of Service (LOS) A, with little to no delay. Analysis indicates it will continue to operate at LOS A with the proposed busway, TSP, and related improvements.

Figure 2.2-12: Proposed Intersection Improvements at Spruce Street



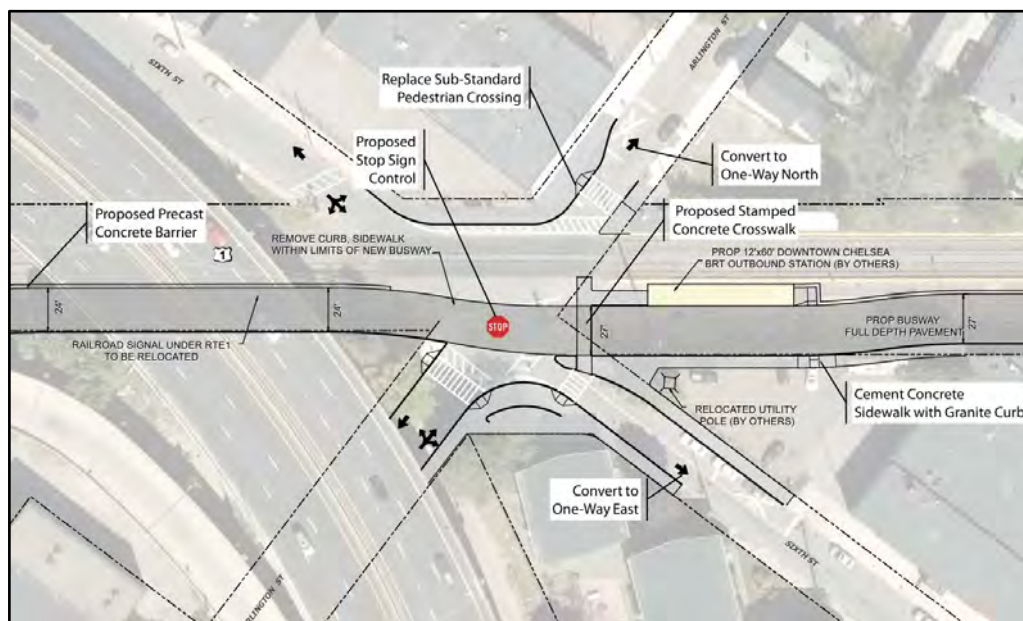
- Arlington Street/Sixth Street

Figure 2.2-13 shows the BRT busway Route 1 underpass and crossing at the Arlington Street/Sixth Street intersection. To the east of the intersection and south of the commuter rail, a BRT station platform for outbound travelers will be easily accessible from both Arlington Street and Sixth Street. To account for additional busway intersection legs and traffic, Sixth Street southeast bound and Arlington Street northeast bound will be converted to one-way operation heading away from the intersection. This limitation of directionality will allow the intersection to operate more safely and be more easily navigated with only four approaches instead of six. The new one-way segments will narrow after the intersection, signifying single direction use and allowing shorter and safer pedestrian crossings. The east/west pedestrian crossing north of the intersection will be moved further north, creating a shorter and safer walking path away from the tracks. The busway construction will also include reconstruction of the existing railroad crossing at Arlington Street/Sixth Street.

An all-way stop will be used to control the new traffic patterns. Each of the four approaches will be required to slow to a stop, resulting in a safe low-speed environment surrounding the intersection including the new BRT station. Even with the addition of the busway, this intersection will become safer for both pedestrians and vehicles due to low speeds, approach reconfigurations, and new crosswalk locations set back from the intersection.

Gate down times for trains currently average approximately 90 seconds at the three Chelsea study area train grade crossings¹. As part of the Silver Line Gateway project, the railroad crossing warning devices will be upgraded to a predictive system that provides constant warning time regardless of approaching train speed. Also, the design of this system will be coordinated with the Silver Line Gateway busway signal system.

Figure 2.2-13: Proposed Intersection Improvements at Arlington Street/Sixth Street

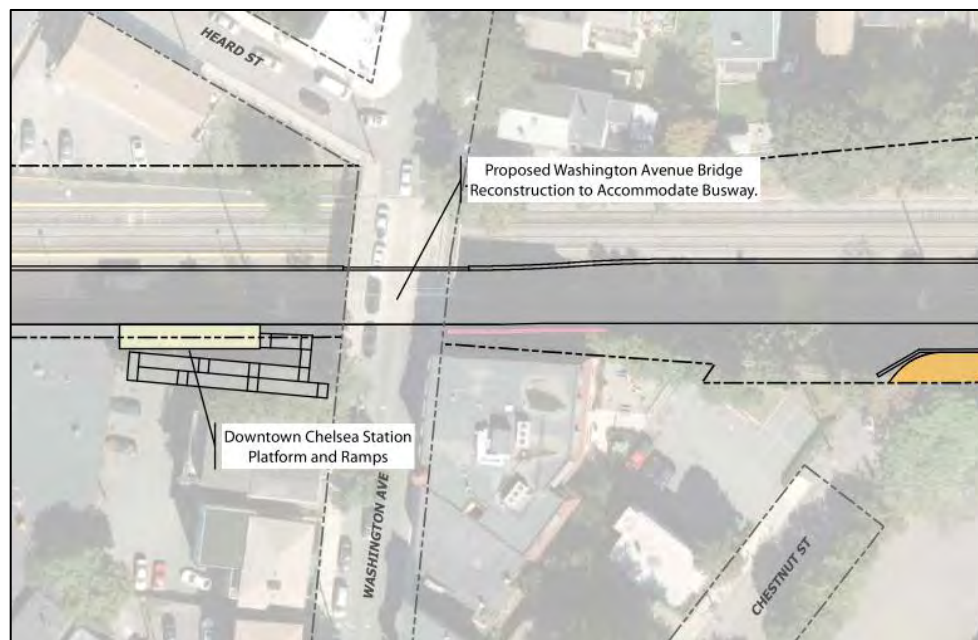


¹ Based on field measurements by AECOM. March 4, 2013. Gate down time varies by train direction, speed, and length.

- Washington Avenue

The inbound BRT station at Washington Avenue will be located just to the west of the busway underpass at Washington Avenue and south of the commuter rail tracks, as shown in Figure 2.2-14. The station will include an American with Disabilities Act (ADA)-accessible ramp providing a physical connection between the station and Washington Avenue. A new shared-use path will begin at Chestnut Street, about 250 feet east of Washington Avenue, proceeding eastward, and paralleling the busway to the south. Busway and shared-use path construction will necessitate the relocation of the overhead 115kv electric utility poles and the building of a new retaining wall north of the shared-use path.

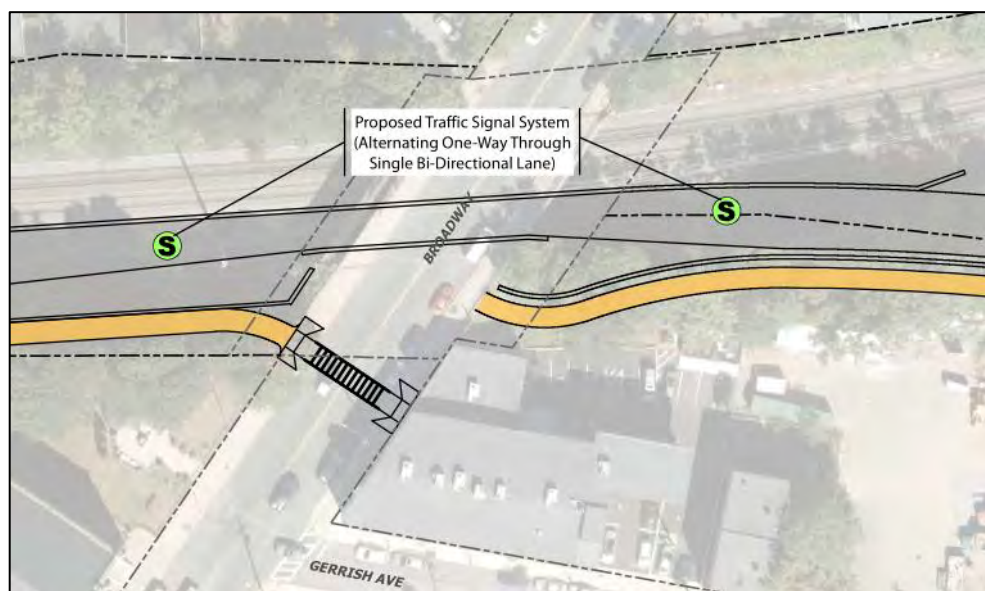
Figure 2.2-14: Proposed Intersection Improvements at Washington Avenue



- **Broadway**

As shown in Figure 2.2-15, the BRT busway will narrow as it passes beneath Broadway, while the shared-use path crosses Broadway at grade at a new pedestrian crossing. Construction will require relocation of the overhead 115kv electric utility poles, removal of unused tracks and ties, and the creation of a retaining wall south of the busway and north of the shared-use path on both sides of Broadway. Due to the narrow horizontal clearance beneath Broadway, the busway will become a single bi-directional lane, allowing one bus to pass through at a time. This has minimal impact on schedules given the planned service frequency of a BRT vehicle every ten minutes in each direction. A TSP signal will be analyzed and implemented to determine which bus has the right-of-way, giving a green signal to the bus that first approaches the underpass. In the opposing direction, the signal will not turn green until the BRT vehicle has fully cleared the bi-directional lane.

Figure 2.2-15: Proposed Intersection Improvements at Broadway



- **Box District Station**

At the Box District BRT Station, as shown earlier in Figure 2.2-6, the busway will be no longer in proximity to the commuter rail tracks. The station will be located to the northwest of the Gerrish Avenue/Highland Street intersection and will give access to both inbound and outbound passengers. The shared-use path will connect with the Box District Station at this point and will be accessible from Highland Street. Construction will require the removal of existing temporary uses from the MassDOT owned right-of-way, including storage containers and parking spaces.

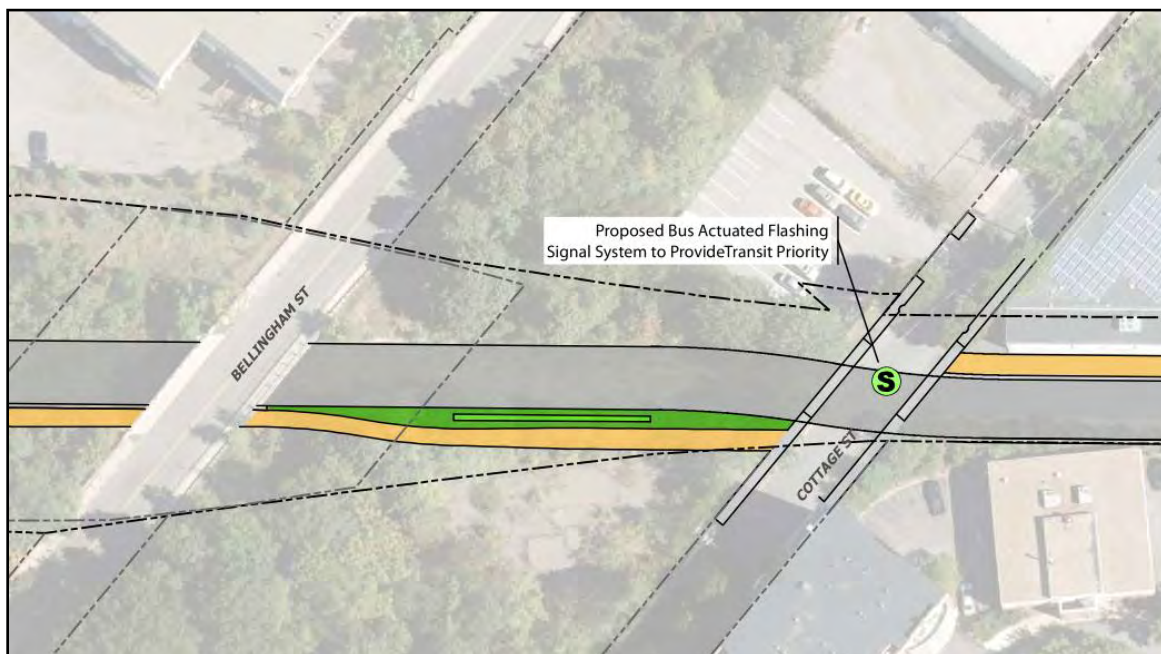
- **Library Street**

Figure 2.2-7 shows the BRT busway and shared-use path in proximity to Library Street, Marlboro Street, and Willow Street. The busway will require the removal of approximately 22 undesignated gravel parking spaces from the MassDOT-owned right-of-way. The shared-use path will continue to parallel the busway to the south and will provide a connection to Library Street.

- Cottage Street

The BRT busway and shared-use path will pass under Bellingham Street and intersect Cottage Street at grade, as shown in Figure 2.2-16. South of Cottage Street, the shared-use path will run parallel to the east side of the busway. Due to the low traffic volumes on Cottage Street of approximately 250 vehicles per hour per direction at peak times, a traffic signal is not warranted. Instead, TSP warning signs will be analyzed and implemented on Cottage Street on both approaches to the busway crossing. The warning signs will be equipped with red flashing signals that activate when a bus is approaching, which will signal Cottage Street vehicles, bicyclists, and pedestrians to stop, and allow the bus to pass through without stopping. The shared-use path will be stop-controlled on both sides of Cottage Street with a warning sign activated when buses are approaching.

Figure 2.2-16: Proposed Intersection Improvements at Cottage Street



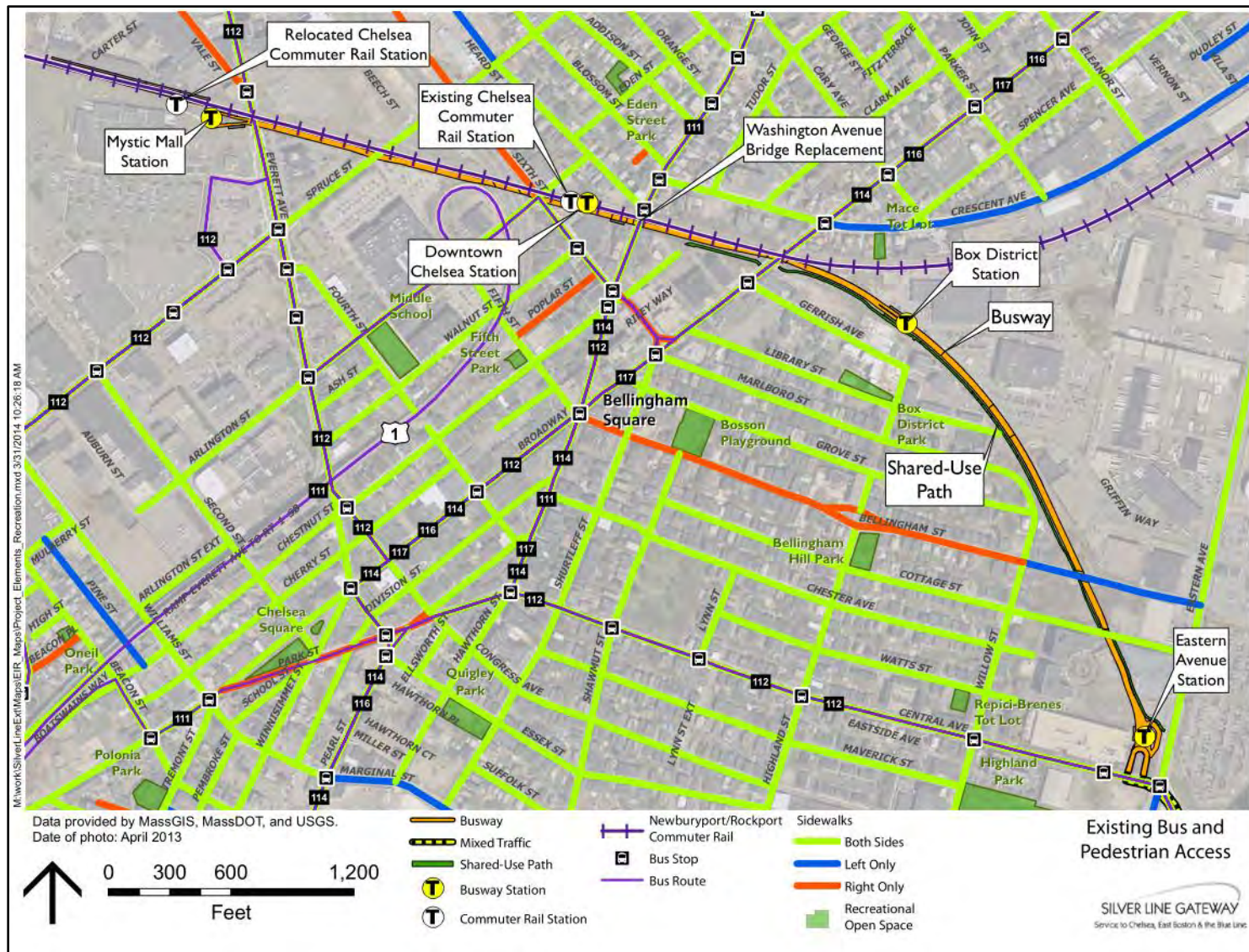
- Eastern Avenue/Central Avenue/Marginal Street

The Eastern Avenue BRT station will be located adjacent to the north end of the Massport bus loop driveway, just west of the Eastern Avenue/Central Avenue/Marginal Street intersection. The station will have platforms for both directions of BRT travel and an additional roadway loop to the east for added Massport bus layover capacity. The shared-use path will continue to run parallel to the east of the busway and connect with station platforms via a crosswalk. The shared-use path will then connect with the existing sidewalk along the west side of Eastern Avenue. The Massport driveway will provide the BRT vehicles access to Central Avenue at the intersection of Eastern Avenue, where they will enter general traffic heading across the Chelsea Street Bridge to and from East Boston. A jersey barrier will be constructed between the busway and the adjacent commercial parking lot to ensure no unauthorized vehicles, pedestrians or bicyclists enter the busway.

Pedestrian/General Accessibility

Figure 2.2-17 shows the existing pedestrian and transit routes, and their general connectivity with the proposed busway and shared-use path in Chelsea. The proposed shared-use path is discussed more fully in Section 2.2.4 and will provide an attractive and convenient biking and walking route to key destinations.

Figure 2.2-17: Existing Bus and Pedestrian Access



BRT Station Design

The basic design concept of the proposed BRT stations for the Silver Line Gateway has advanced since the filing of the Expanded ENF on November 15, 2013. Typical passenger amenities and features at each BRT station include:

- Passenger information systems for next bus arrival times;
- Automated fare collection system for off-board fare collection and all-door boarding to reduce station dwell times;
- Raised platform floors that align with the floor of the Silver Line Gateway buses, making boarding and alighting easy and reducing dwell time;
- Stations with canopied platforms for shade and shelter;
- Windscreens with passenger activated heaters;
- Active and passive security features, including cameras;
- Sheltered bicycle storage;
- Accessible sidewalks and crosswalks;
- Wider station spacing typical of rapid transit;
- Consistent and easily identifiable signage and service logo;
- Tactile warning strips along the platforms to alert people of their approach to the edges of boarding and alighting areas;
- Lighting;
- Seating; and
- Trash receptacles.

Figures 2.2-18 through 2.2-20 show a series of renderings of the proposed BRT stations illustrating the characteristics of the BRT platform, type of canopy, and its amenities. The BRT station concepts were developed with input from the City of Chelsea. Color, materials and other program details will be developed during final design based on additional community input.

Figure 2.2-18 shows an example of weather protection at a typical BRT station for the Silver Line Gateway. The figure depicts how the BRT station incorporates weather protection by using an outer canopy in combination with inner shelters. The canopy column is comprised of concrete panels and canopy infill with louvers installed on transparent panels. The shelters can incorporate clear or multi-colored surfaces. The panels can accommodate a range of standard colors, and some combinations of columns, infill and shelters are interchangeable. Each station could accommodate local artwork in large panels at the front of each shelter.

Figure 2.2-18: Example of Weather Protection at BRT Platform



Note: BRT Station design is conceptual only. Color, materials and other program details will be developed during final design

Figure 2.2-19 shows an example of a BRT station platform with connected canopies at the Box District Station. The BRT platform is made weather-protected by using canopy and shelters. Concrete panels are used for canopy columns and louvers with transparent panels used for canopy infill. The shelters can incorporate glass and multi colored opaque wall surfaces. Some combinations of columns, infill and shelters are interchangeable. Each site could potentially have a different color scheme with the potential for artwork in large panel at front of each shelter. The BRT platform design shown here includes an optional windscreen for a second fare machine. The full connected canopy concept shown in the figure is feasible at the Box District Station, where the inbound and outbound platforms are aligned directly across from each other.

Figure 2.2-19: Box District with Connected Canopies



Note: BRT Station design is conceptual only. Color, materials and other program details will be developed during final design.

Figure 2.2-20 illustrates an example of a typical BRT station platform for Silver Line Gateway with single canopy. As shown in the figure, the BRT platform is made weather protected by using a single outer canopy and interior shelters. The canopy columns are made up of concrete and the canopy consists of louvers installed on transparent panels. The shelters consist of glass and colored opaque surfaces. Similar to the previous examples, combinations of columns, infill and shelters are interchangeable.

Figure 2.2-20: Example BRT Platform with Single Canopy



Note: BRT Station design is conceptual only. Color, materials and other program details will be developed during final design.

Coordination with Other Transit Schedules

The Silver Line Gateway operating schedule will be developed in coordination with other MBTA services in the corridor to reduce passenger waiting times and enhance connections. Travel demand forecasting indicates that the highest volumes of passenger transfer in Chelsea will be with local buses at Bellingham Square and Mystic Mall, and with commuter rail. In East Boston there will be substantial passenger transfers at the Airport Blue Line, and in Boston the major transfer point will be at South Station.

Operations and Maintenance Responsibilities

The City of Chelsea has committed to snow removal on the busway within the City of Chelsea. The MBTA will be responsible for snow removal at the BRT Station platforms and for all other maintenance of the BRT system.

2.2.3 Commuter Rail Station Relocation Update

One of the components of the Silver Line Gateway project is the relocation of the existing Chelsea Commuter Rail Station, which does not meet state or federal accessibility requirements. The station will be relocated within MBTA right-of-way on the west side of the proposed Mystic Mall BRT Station where the busway will end (see Figure 2.2-21). The relocated Commuter Rail Station will consist of 800 feet long, high-level inbound and outbound side platforms. Some sections of the platforms will be provided with canopies. The new station will comply with all accessibility requirements. Additionally, the new station will support ongoing economic development initiatives in the City of Chelsea in the Everett Avenue corridor.

Service Implications

Relocation of the commuter rail station will not have any service implications, nor will the addition of buses at the commuter rail grade crossings. Traffic delay created by Silver Line buses crossing where the busway intersects existing streets is expected to be minimal. When buses arrive before or after a commuter train crossing, the total vehicle delay and queuing on streets intersecting the busway could be extended by approximately 10-15 seconds compared to existing conditions. Gate down times for trains currently average approximately 90 seconds at each of the at-grade crossings in Chelsea that are adjacent to the proposed busway and relocated commuter rail station. Commuter Rail and Silver Line schedules and signal equipment will be coordinated to reduce delay to vehicles at these grade crossings. The project is modernizing railroad grade crossing warning devices and signal systems to reduce railroad related traffic delays at the grade crossings of Arlington Street/Sixth Street, Spruce Street, Everett Avenue, Third Street, and Second Street.

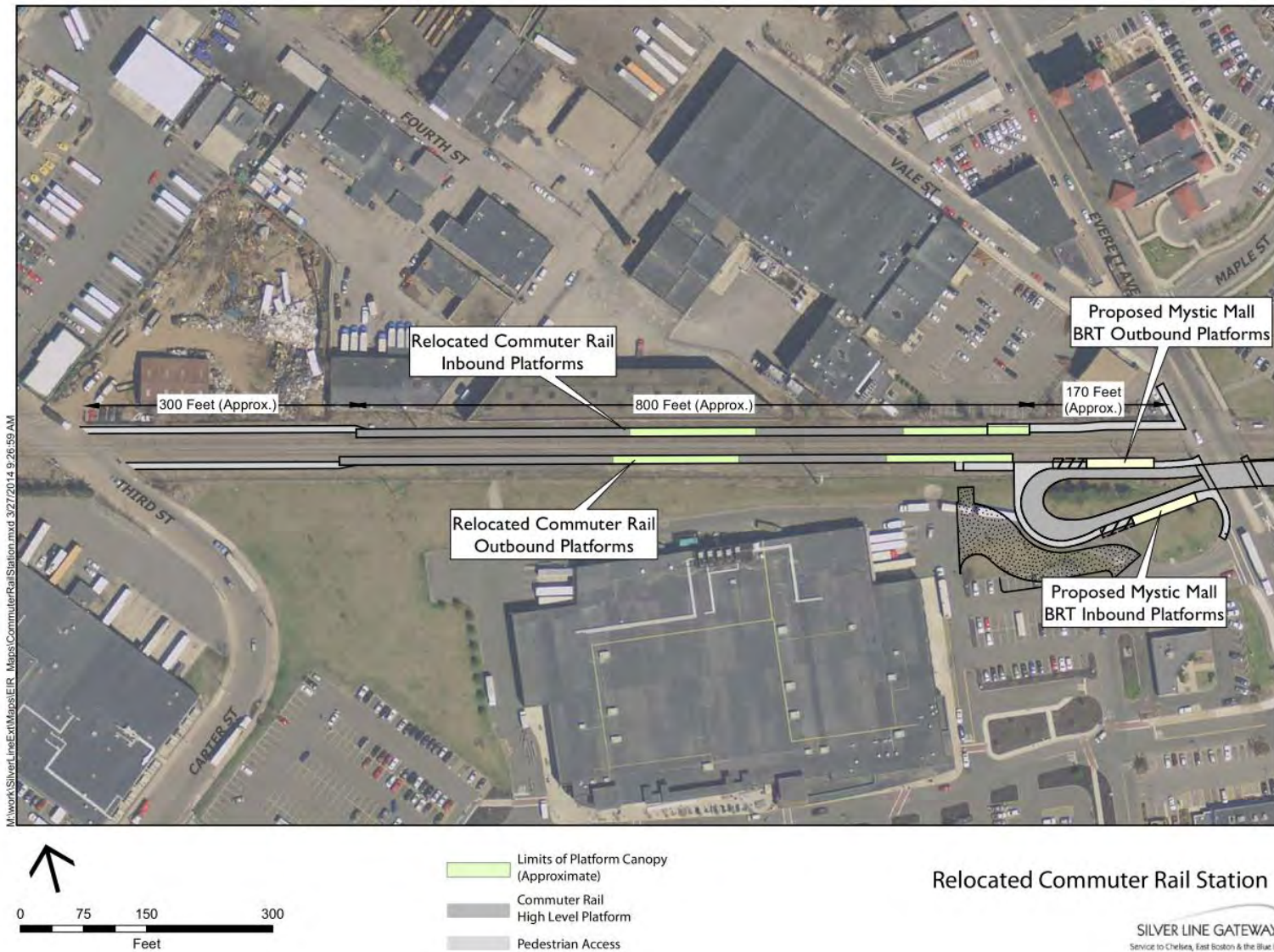
Connectivity

The relocated Commuter Rail Station will be accessed from Everett Avenue and Third Street via new accessible sloped sidewalks provided on both sides of the commuter rail tracks. On the north side of the tracks a 10-foot wide accessible sloped sidewalk is proposed that will extend from Everett Avenue and Third Street to the relocated Commuter Rail Station inbound platform. A sidewalk with granite curb is proposed on the west side of Everett Avenue to give continuity to the proposed sidewalk along the rail line. On the southern side of the commuter rail tracks, an 8-foot wide cement concrete sidewalk is proposed around the Mystic Mall BRT Station for pedestrian access to the outbound platform. Pedestrian access to the outbound platform from Third Street is provided via 10-foot wide accessible sloped sidewalk. An accessible ramp will also be provided to the eastern side of the outbound platform of the relocated Commuter Rail Station. The existing pedestrian crossing at the intersection of the Everett Avenue and Market Basket driveway will be retained. Drop-off and pick up service from the relocated Commuter Rail Station will be achieved from the realigned driveway of Market Basket.

Parking

Customer parking is not currently provided at the existing Chelsea Commuter Rail Station and none will be provided at the relocated station as part of this project. Normal City of Chelsea enforcement of on-street parking is expected. Coordination with the owners of adjacent businesses will continue throughout final design to develop an enforcement strategy to discourage commuter parking in the existing surface parking lots of retail, commercial, and government institutions.

Figure 2.2-21: Relocated Commuter Rail Station



2.2.4 Shared-Use Path Update

The City of Chelsea and the Executive Office of Energy and Environmental Affairs (through the Gateway Cities Program) has worked with MassDOT to incorporate a shared-use path adjacent to the proposed busway. The proposed shared-use path will be constructed as part of Phase I of the Silver Line Gateway project. The project goal is to create a linear trail from the Chelsea River waterfront to downtown Chelsea that will serve as both a transportation alternative and recreational facility. The path will enhance connections among residential, commercial and recreational areas in the community.

Latest Design

The proposed shared-use path will be approximately $\frac{3}{4}$ mile long and will travel from the proposed Eastern Avenue station to Chestnut Street in Chelsea either within or adjacent to the busway component, depending on right-of-way restrictions. The width of the shared-use path will vary from 8.5 to 10 feet, also depending on right-of-way restrictions. Please refer to previous Figures 2.2-4 through 2.2-9 for detailed design and location of the proposed shared-use path.

The shared-use path will begin at the sidewalk on western side of Eastern Avenue. The shared-use path will make connections with the inbound and outbound Eastern Avenue BRT Station platforms via pedestrian crossing.

The shared-use path then will run parallel to the east side of the busway until it reaches Cottage Street. The path will be 10-foot wide along most of its alignment. At Cottage Street, the path will make an at-grade crossing at the busway via a new pedestrian crossing. North of Cottage Street, the path will continue to run to the west side of the busway, separated from it by the proposed biofilter swale.

The shared-use path will cross beneath Bellingham Street running adjacent to the busway. The path will then narrow down to 8.5 feet just north of Bellingham Street. As the path travels further north it will widen back to 10 feet and will again be separated from the busway by a biofilter swale. As shown in Figure 2.2-7, the path will make a connection with Library Street via a new paved walkway before reaching the Box District. In the Box District, the path will make connections with the proposed Box District BRT Station and Highland Street via a proposed at-grade walkway. The separation of the path from the busway by use of biofilter swales will end at the southern end of the Box District Station.

North of the Box District Station, the proposed shared-use path will continue to run adjacent to the busway, separated from the busway by a retaining wall. The path will then rise on its eastern approach to Broadway so that it makes an at-grade crossing of Broadway, via a new mid-block crosswalk adjacent to the existing Broadway Bridge. A section (12 feet) of the existing guardrail on both sides of the sidewalk on Broadway will be removed to connect the path with Broadway.

After crossing Broadway, the shared-use path will continue at this elevation adjacent to and behind the Saint Rose Church/Elementary School, to connect with the north end of Chestnut Street. The elevation difference between Broadway and Chestnut Street will require the path to be sloped or require the construction of an additional retaining wall abutting St. Rose's property. Additionally, the existing overhead 115kv electric utility poles will be relocated to accommodate the shared-use path.

Design Coordination with Busway

The proposed shared-use path will make at-grade crossings at Broadway, Highland Street and Cottage Street. Pedestrian crossings will be provided at the at-grade crossings. Bellingham Street is already grade-separated above the proposed busway and shared-use path. Innovative design approaches are being developed to coordinate the path and the busway alignments and crossing points. The shared-use

path will make connections with the busway at the Box District and Eastern Avenue Stations, thus providing access to the residential and industrial areas adjacent to the stations.

On-Street Components and Connections

The proposed shared-use path will begin at Chestnut Street and provides several connections to adjacent residential and industrial areas. The path will then connect with Broadway providing access to Saint Rose Church/Elementary School and nearby residential areas and businesses. In the Box District area, the path will directly connect to Highland Street providing access to the residents in the Highland Street and Gerrish Avenue areas. Further south, the shared-use path will connect to Library Street via a newly constructed paved pathway. Another connection will be provided at Cottage Street. Figure 2.2-17 shows the existing pedestrian and transit routes and their general connectivity with the proposed busway and shared-use path in Chelsea. The proposed shared-use path will provide an attractive and convenient biking and walking route to key destinations.

Connectivity with Other Bicycle and Pedestrian Facilities

The proposed shared-use path will be accommodated within and parallel to the existing railroad right-of-way. From the downtown area, the path will transition to an on-road bike facility and walking route to connect to key destinations, including schools, the Mystic Mall area, and relocated Commuter Rail Station. As envisioned, the path could one day connect to other regional path systems including the existing East Boston Greenway, Northern Strand Community Trail and Malden River Trail. In southwest Chelsea, shared-use paths are provided along the waterfront in Mary O'Malley Waterfront Park.

The East Boston Greenway is 1.5 miles of pathway for use by bikers, runners and walkers. It begins from Piers Park at Marginal Street and Bremen Street and continues to Frankfort Street just south of Lovell Street. Massport is currently completing construction on an extension of the Greenway from Frankfort Street to Short Street and the Wood Island Marsh. The City of Boston will construct an additional segment of the Greenway between Short Street and Constitution Beach.

The Northern Strand Community Trail is a 9-mile path that runs through Everett, Malden and Saugus. In Everett, the trail can be accessed near Air Force Road and the SkyZone Indoor Trampoline Park, in the vicinity of the Best Buy store. It then runs past the Madeline English School before entering Malden behind the Bell Rock cemetery. Construction work to extend the trail to Revere is ongoing. While there is no connection between the Northern Strand Community Trail and the proposed shared-use path, there may be opportunities to provide a direct connection with the Northern Strand Community Trail in the future.

Potential Demand

In order to estimate potential demand for the shared-use path, data from nearby shared-use paths were reviewed and tallied. Data is available from the Boston Region MPO Bicycle/Pedestrian Count Database.

For this comparison, urban shared-use paths were reviewed. The most comparable paths with recent traffic counts are the East Boston Greenway, the Minuteman Bike Path and the Dr. P.D. White Bike Path in Boston. These volumes are shown in Table 2.2-1.

Table 2.2-1: Existing Path Volumes

	East Boston Greenway¹	Minuteman Bike Path²	Dr. P.D. White Path³
	Weekday		
7:00 – 8:00 AM	61 (8)	460 (199)	422 (163)
8:00 – 9:00 AM	55 (4)	630 (228)	432 (260)
5:00 – 6:00 PM	83 (26)	393 (163)	556 (333)
6:00 – 7:00 PM	113 (24)	607 (234)	815 (320)
	Saturday		
12:00 – 1:00 PM	40 (8)	265 (189)	377 (119)
1:00 – 2:00 PM	73 (19)	266 (185)	368 (122)

Note:

Path volumes XX(YY): The large number is the total users. The number in parentheses is the number of bicyclists only.

Data collected from the Boston Region M.P.O. Bicycle/Pedestrian Count Database.

1 - East Boston Greenway: Data Collected 7/18/2012, 7/21/2012 and 7/26/2012 (Count 11211, 11217 and 11218)

2 - Minuteman Bike Path: Data Collected 7/25/2009 and 5/14/2013 (Count 10163 and 11292)

3 - Dr. P.D. White Path: Data Collected 9/12/2012, 9/13/2012 and 9/22/2012 (Count 11271, 11272 and 11274)

As shown in Table 2.2-1, the volumes on the Minuteman Bike Path and Dr. P.D. White Path are considerably higher than the East Boston Greenway. The Minuteman Bike Path and the Dr. P.D. White Path are also both utilized as recreational paths, which increases the total volume of users. Therefore, the volumes for the proposed Chelsea Greenway are likely to be similar to the East Boston Greenway, with a morning peak of approximately 60 total users per hour and an evening peak of approximately 110 total users per hour. The total users are a combination of walkers, bike riders, roller bladers, strollers, and other users.

There are very few shared-use path locations that have collected count data for the entire day. However, one of the locations along the Minuteman Bike Path did collect weekday data from 7:00 AM to 7:00 PM, which indicated that the daily volumes are approximately eight times higher than the peak hour volume. Based on this ratio, the daily volumes on the Chelsea Greenway are estimated to be approximately 900 total users. Not all of these users will be bicyclists. Based on the counts at the Dr. P.D. White Bike Path 20% of the total users on the bike path will be bicyclists. Therefore, on a daily basis, 180 of the daily users will be bicyclists.

When determining the need for bike racks and other amenities, it is important to note that many of the users of the path will be making a round trip. Therefore, a daily bicycle volume of 180 bikes per day will likely mean close to 90 bicyclists traveling in each direction.

2.2.5 Washington Avenue Bridge Update

Design Coordination with Busway Needs

As referenced in the Expanded ENF, the primary coordination issue associated with the Washington Avenue Bridge project was the design of the bridge abutments to accomplish the needed width for the commuter rail and busway beneath the bridge. An early concept that was rejected would have provided a single-pier design with only enough width for a one-way bus lane (Figure 2.2-22). Design modifications were proposed and are now being advanced in final design to provide a two-pier configuration (Figure

2.2-23) that allows a two-way busway with a slightly reduced shoulder width on either side, while maintaining the required commuter rail clearances.

Figure 2.2-22: Cross-Section of Early Concept of Washington Avenue Bridge with Single-pier Design

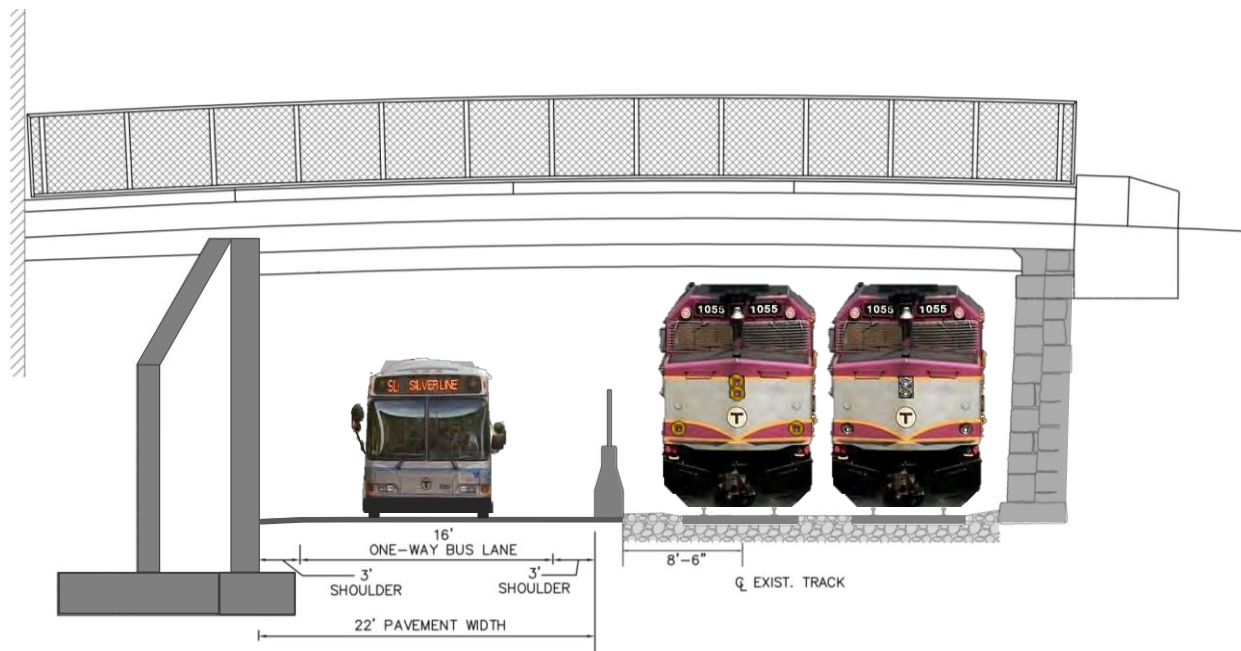
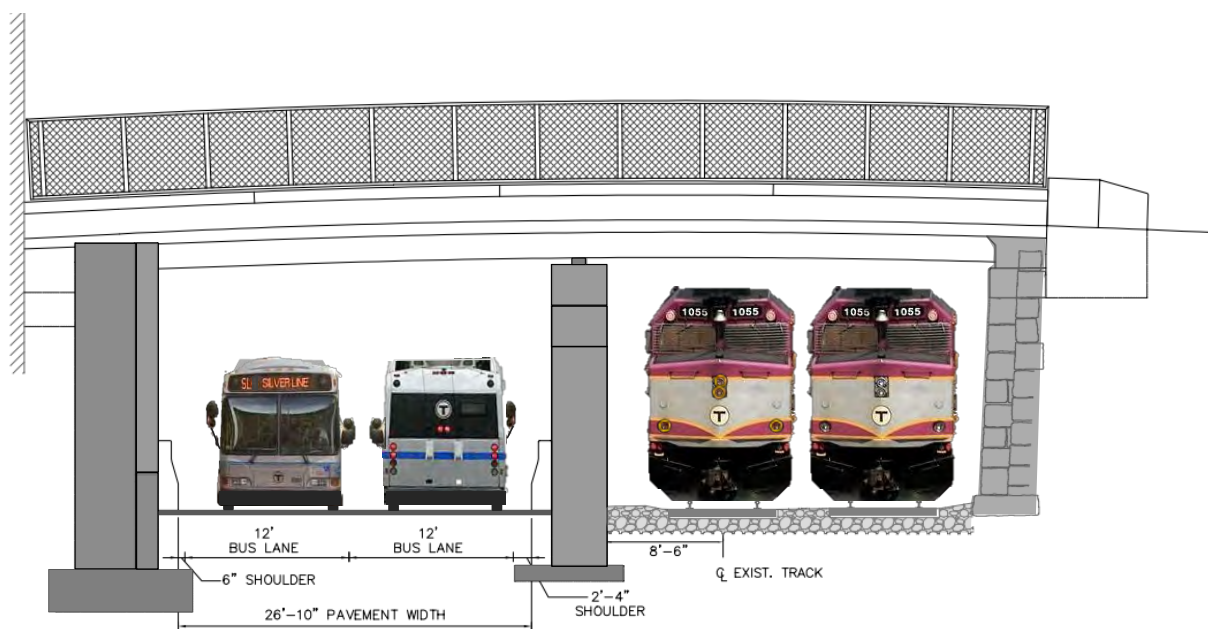


Figure 2.2-23: Cross-Section of New Concept of Washington Avenue Bridge with two-pier Design



Construction Staging

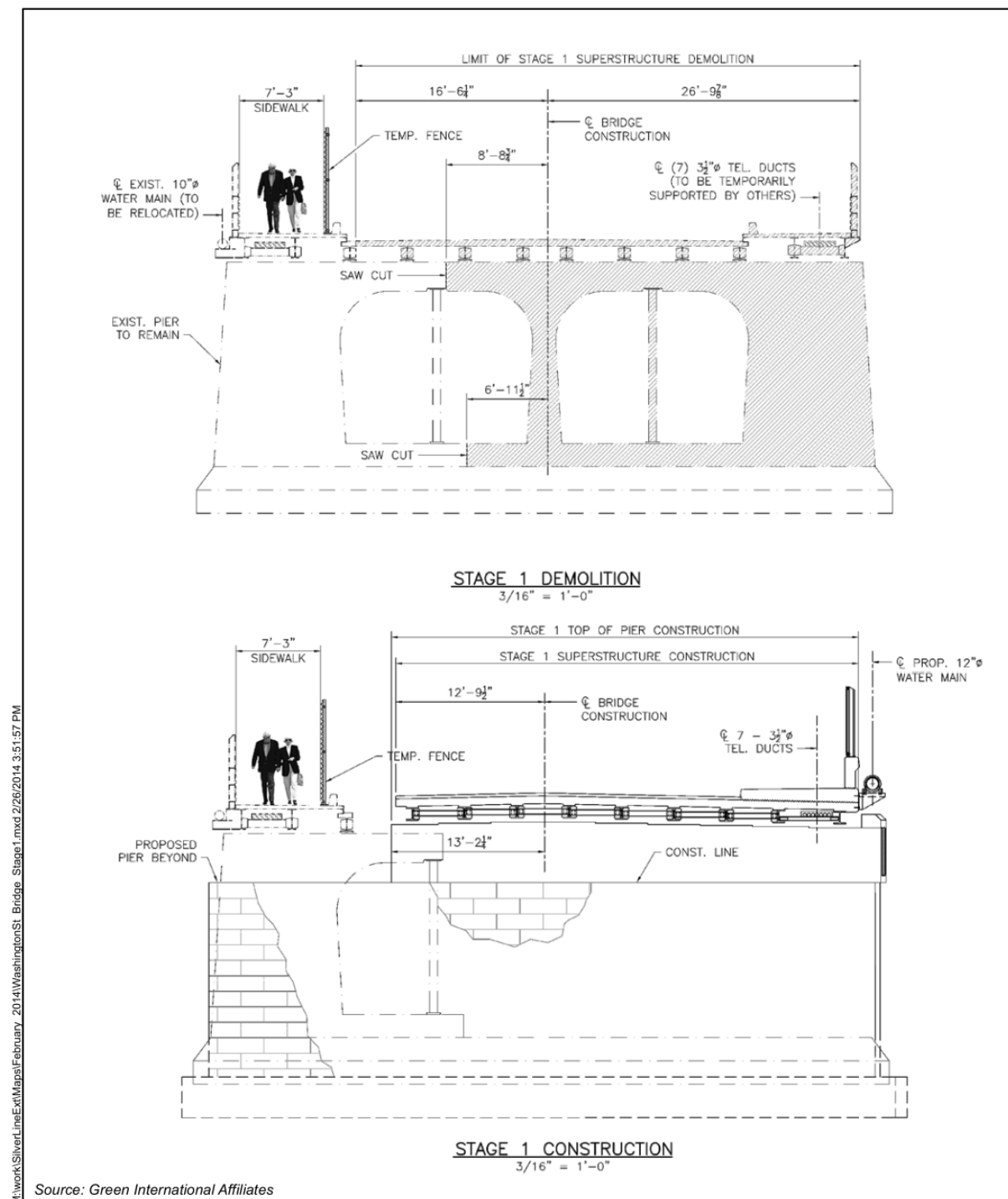
The Washington Avenue Bridge will be constructed in two stages. The initial stage (Figure 2.2-24) will close the bridge to all vehicle traffic while east-side demolition and new construction occur. During this stage, the west-side sidewalk will remain open for pedestrian use with appropriate safety measures in place.

The duration of stage 1 is estimated to be 8 months for demolition and utility relocations and 9 months for construction.

Stage 2 (Figure 2.2-25) will complete the demolition and construction on the west side of the bridge. During this stage, southbound vehicle traffic will be allowed, and pedestrian access will be provided on the east-side sidewalk.

The duration of stage 2 is estimated to be 1 month for demolition and 6 months for construction.

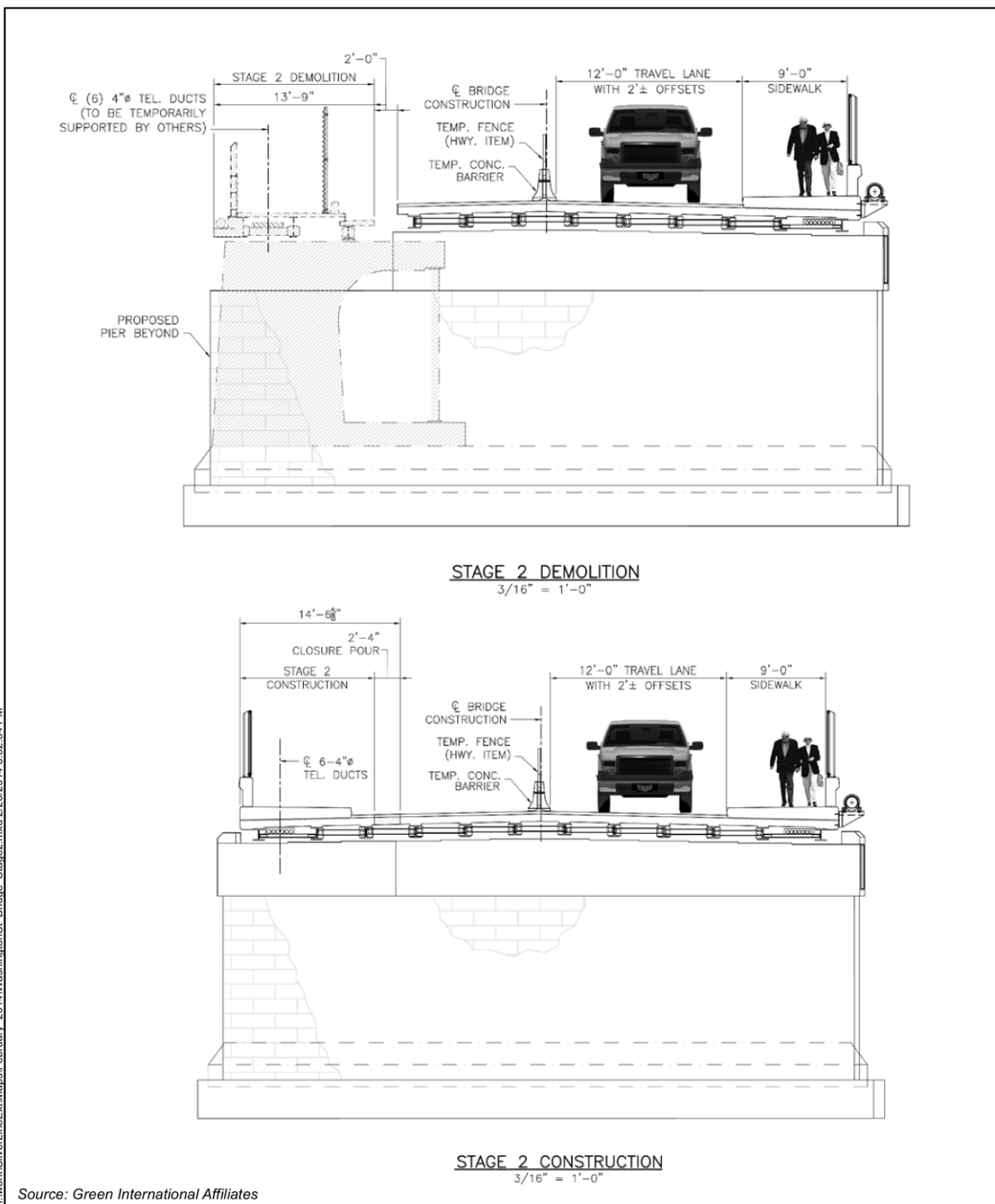
Figure 2.2-24: Washington Street Bridge Construction Stage 1



**Washington Street Bridge
Construction Stage 1**

SILVER LINE GATEWAY
Service to Chelsea, East Boston & the Blue Line

Figure 2.2-25: Washington Street Bridge Construction Stage 2



**Washington Street Bridge
Construction Stage 2**

SILVER LINE GATEWAY
Service to Chelsea, East Boston & the Blue Line

Maintenance of Access (Pedestrian/Emergency Vehicles/MBTA Routes) during Construction

A Traffic Detour Evaluation was developed for the construction phase of the Washington Avenue Bridge replacement. The purpose of the evaluation was to identify alternate routes for vehicle traffic during construction, and the potential impacts of the alternate routing. Special consideration was given to maintenance of pedestrian traffic (noted earlier), access for emergency vehicles from the nearby Chelsea Fire Station and impacts to MBTA bus service. Excerpts from the Traffic Detour Evaluation are provided below.

Temporary traffic control plans for the overall Stage 1 and Stage 2 detours, as well as temporary traffic control plans for the proposed bus detours are provided in Appendix A.

- Emergency Response

The main fire station in Chelsea is located south of the bridge on Chestnut Street near its intersection with Washington Avenue. With the bridge closed, access from the fire station to the north side of the bridge is substantially affected. The response route from the fire station to the north would require travel either through the neighborhood via Sixth Street or by turning left onto Washington Avenue from the station and then reversing direction onto Broadway. The latter path would require turning onto Cary Avenue and coming back to the affected neighborhood.

In consideration of the above, the potential route through Sixth Street was reviewed. While a portion of the street is designated one-way (but could still accommodate a responding emergency vehicle), the street is relatively narrow and currently allows residential parking along both sides of the street. Allowing regular fire apparatus to travel the wrong way on this one-way street would require a significant removal of on-street parking. For a likely 12-month duration, this would create a negative impact for the residents on that street.

An alternative was evaluated in an effort to quicken the route to Broadway and avoid the congestion that typically exists on the lower end of Washington Avenue at Broadway. This alternative avoids modifying the designated use of City Hall Avenue that runs between Broadway and Washington Avenue. City Hall Avenue is currently a one-way street but wide enough to allow for two travel lanes and parking lanes along each curb. The alternative includes removing the curbside parking on the north side, installing a temporary barrier along the section and designating the north side of the barrier for emergency vehicle eastbound movements only. This would leave a wide single lane for westbound movement and still be able to accommodate the bus traffic. The ability of emergency apparatus leaving the station and being able to turn within Fay Square and then into this emergency lane was tested using AutoTurn software and found satisfactory. While there may still be some impact on response time, this option accelerates the time to get to Broadway and then the responder can turn onto Cary Avenue or even Crescent Street if proceeding in the wrong direction on that particular section is determined to be acceptable by the City fire officials. Further coordination will occur with the City of Chelsea fire officials to determine the preferred option.

- MBTA Bus Service

The final impact area examined relates to the MBTA bus service and specifically the effect on Bus Route #111 that currently runs along Washington Avenue. The other three bus routes that travel within downtown are not affected by the closure. The bridge closure will require a temporary re-routing of Bus Route #111. In evaluating the potential re-routing options, an attempt was made to identify an alternative that minimized the impact on bus stop locations and reduced the added time it would take for patrons in the affected area to walk from home to the stop, particularly in the morning when time is critical for people going to work. In doing so, the inbound route that currently runs southbound along Washington Avenue

was kept on that street until reaching Crescent Street, just prior to the bridge construction area. Bus turning evaluations were completed and it was determined that buses should be able to turn left from Washington Avenue onto Crescent Street and then turn right onto Broadway. The route would then continue by turning right onto City Hall Avenue and then left back onto Washington Avenue at Fay Square. This would result in minimal impact. The outbound route would be more affected as the bus would not turn left onto City Hall Avenue from Broadway as it does today but continue north. While tests showed the route would be able to turn left onto Cary Avenue, when discussed with MBTA staff, it was suggested the outbound route would then turn right onto Crescent Street and then left onto Cary Avenue, which were easier sets of turns. The bus could then proceed straight across Broadway. The alternative routing of Bus Route #111 would require some temporary relocations of bus stops and areas were selected that were relatively close to the current stops. This could be refined following further MBTA review.

- Traffic Impacts

The potential impact of bridge construction on traffic flow was also estimated. Using peak hour traffic counts, street network characteristics, movement restrictions and distribution assumptions related to traffic presently traveling through downtown (i.e. East Boston via McCardle Bridge or Chelsea Bridge), a traffic volume network was developed.

The impact of the closure on these intersections was determined by completing a level of service (LOS) analysis in accordance with the Highway Capacity Manual (2010). Level of service is defined in terms of vehicle delay and ranges from LOS A (free-flow conditions) to LOS F (long delays). LOS C is considered an average condition while LOS D, although exhibiting higher-than-average delay, is typically considered acceptable in urban locations. LOS F is considered unacceptable and represents a condition where improvements should be investigated. The following summarizes the key findings from the LOS analyses:

- All of the intersections operate at LOS „D“ or better under current peak hour conditions.
- The most significant impact due to the estimated shift in traffic volumes as a result of the bridge closure would be at the Everett Avenue/Spruce Street intersection. The level of service during the AM peak hour is estimated to be reduced from LOS „D“ to LOS „F“.
- Broadway at Cary Avenue is estimated to be impacted during the afternoon peak hour where the LOS will be reduced to LOS „D“. Signal timing tests were done that showed no overall improvement in LOS. However, improvements on the Broadway northbound approach, which is the key impact movement during the afternoon peak hour, would be improved in terms of delay and queuing.

For those two locations, signal timing changes and/or lane configuration changes were evaluated to determine if the impacts could be alleviated. As a result, the Everett Avenue intersection with Spruce Street could be returned to LOS „D“ in the morning peak hour with timing changes and also modifying the designated lane use on the Spruce Street approach.

- Summary

As a result of the evaluation and taking into consideration the anticipated construction methods as well as input from the MBTA and the City of Chelsea, a recommended plan for maintaining traffic, transit and emergency response from the fire station at Fay Square during bridge construction was developed. As illustrated in Appendix A, the key aspects of the TMP are as follows:

- Install advance warning signage including portable variable message sign (VMS) boards approaching the project and within the project area informing motorists of the construction and detours;
- Incorporate signal timing modifications at the intersections of Everett Avenue/Spruce Street and Broadway/Cary Avenue for the temporary construction period. The change at the Everett/Spruce intersection would also include modified lane configurations on one approach. These intersections should be monitored at the outset of the bridge closure in order to facilitate any fine tuning;
- Bus Route #111 be rerouted with the inbound turning onto Crescent Street and the outbound route remaining on Broadway right onto Crescent Street and then left onto Cary Avenue. Temporary bus stops with signage would be needed;
- Modify City Hall Avenue for the bridge closure period to allow the north side of the street to be used by emergency apparatus traveling eastbound to Broadway. A temporary concrete barrier, flexible delineators and signage will be required. Also, a pedestrian crossing including a small break in the barrier will need to be maintained to the Senior Center that is located behind the fire station.

2.3 Additional Design Elements

The complete 25% design plan set with proposed cross-sections, elevations, structures, stormwater management systems and utility connections are provided in Appendix A.

2.4 Construction Phasing

A detailed construction phasing description is provided in the Construction Management Plan portion of Chapter 7, Construction Period Impacts.

3 Wetlands

From the Secretary's Certificate on the Expanded ENF:

"The project will require a 401 WQC from MassDEP for the permanent alteration of 13,798 sf of IVW along the project corridor within the abandoned ROW. The EENF demonstrates that these impacts cannot be avoided if the project is to be located in the former railroad ROW, as compared to a project alternative that would operate on existing city streets. An alternatives analysis will be required as part of the 401 WQC process, as will wetlands replication. The Single EIR should present a replication plan along with a wetlands evaluation, as requested by MassDEP in its comments."

As identified in the Expanded ENF, the proposed project will result in the permanent alteration of 13,798 square feet of isolated vegetated wetlands (IVWs). The Chelsea Conservation Commission issued a Determination of Applicability (refer to Appendix B) on December 3, 2013 determining that the two isolated vegetated wetlands were not subject to jurisdiction of the Massachusetts Wetlands Protection Act (WPA; MGL Ch. 131 s. 40) and its implementing regulations (310 CMR 10.00). Subsequent to this finding, the United States Army Corps of Engineers (USACOE) determined that these wetlands are subject to review and permitting under Section 404 of the Clean Water Act; the USACOE Category 2 Massachusetts General Permit (MGP) was issued on March 19, 2014. The Massachusetts Office of Coastal Zone Management (CZM) reviewed the project through the USACOE permitting process and found the project is consistent with the MA CZM policies, and subsequently the project was eligible for the Category 2 MGP. As a result of the USACOE finding, a Water Quality Certification (WQC) will also be required from the Massachusetts Department of Environmental Protection (MassDEP) under Section 401 of the Clean Water Act; the WQC application was filed on February 27, 2014 and consultation is ongoing.

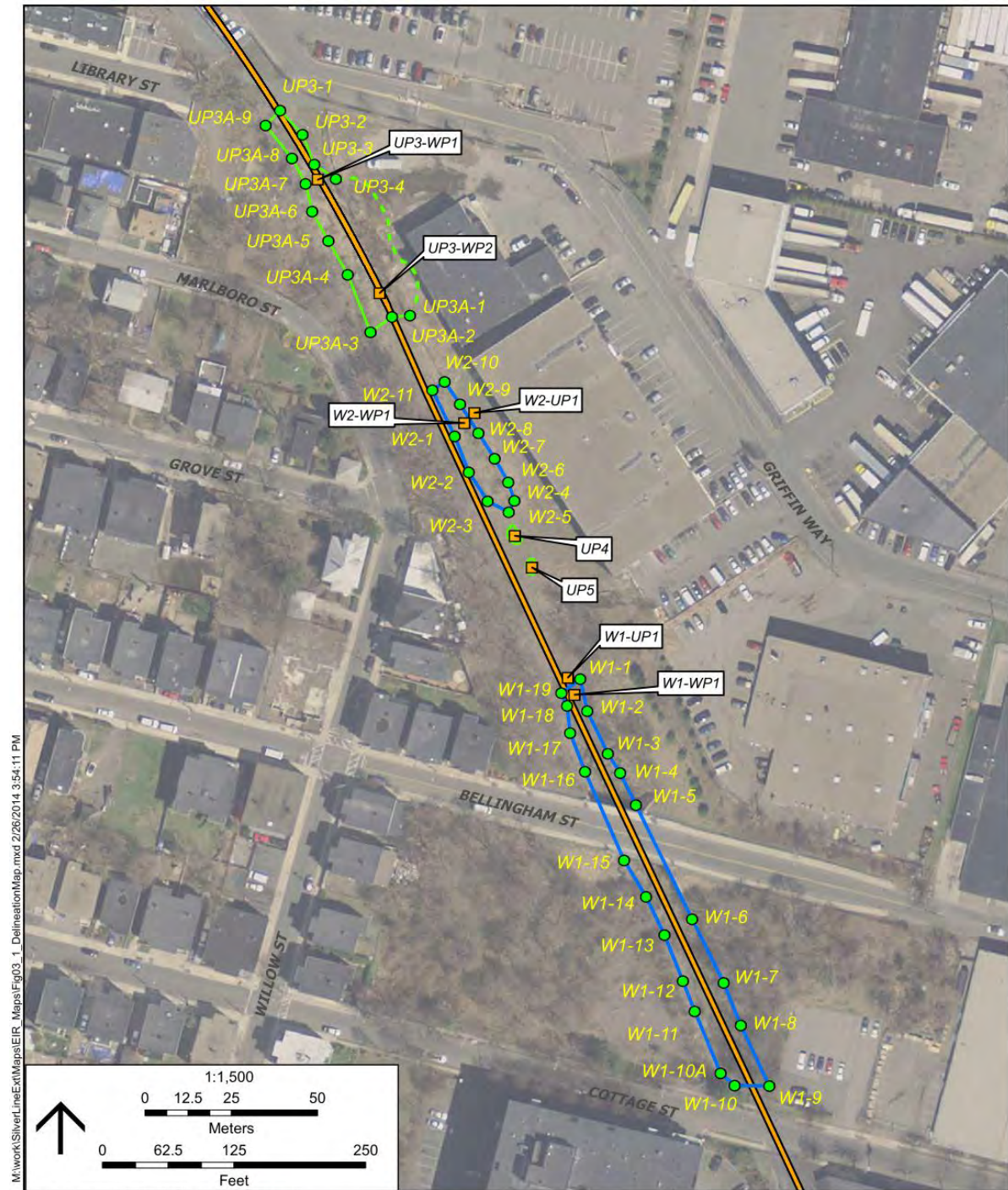
Figures 3-1 and 3-2 illustrate the location of the isolated vegetated wetlands (IVWs) within the project site while the Wetland Replication Plan is presented in Section 3.3.

Table 3.0-1 shows a summary of the local, state, and federal permits and/or approvals required for the completion of the proposed project. Copies of the correspondence received from the regulatory agencies can be found in Appendix B.

Table 3.0-1: Project Permitting Summary

Issuing Authority	License, Permit or Approval	Date of Submittal/Permit Issuance
Massachusetts Environmental Policy Act	Single Environmental Impact Report Certificate	Submitted 3/31/14
Chelsea Conservation Commission	Determination of Applicability	Negative Determination issued 12/3/13
Massachusetts DEP	Water Quality Certification (CWA Section 401)	Application submitted 2/27/14, consultations are ongoing.
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permitting/NEPA Compliance	Category II Authorization issued 3/19/14
Office of Coastal Zone Management	Federal Consistency Review	Conducted concurrently with U.S. Army Corps of Engineers review of project. Determined Project was eligible for Category II authorization.
Massachusetts Water Resources Authority	Plan review and approval for work near sewer easement (8M Permit)	Permit submittal date to be determined.
USEPA	NPDES Construction General Permitting	Permit submittal date to be determined.

Figure 3-1: Delineation Map, Chelsea



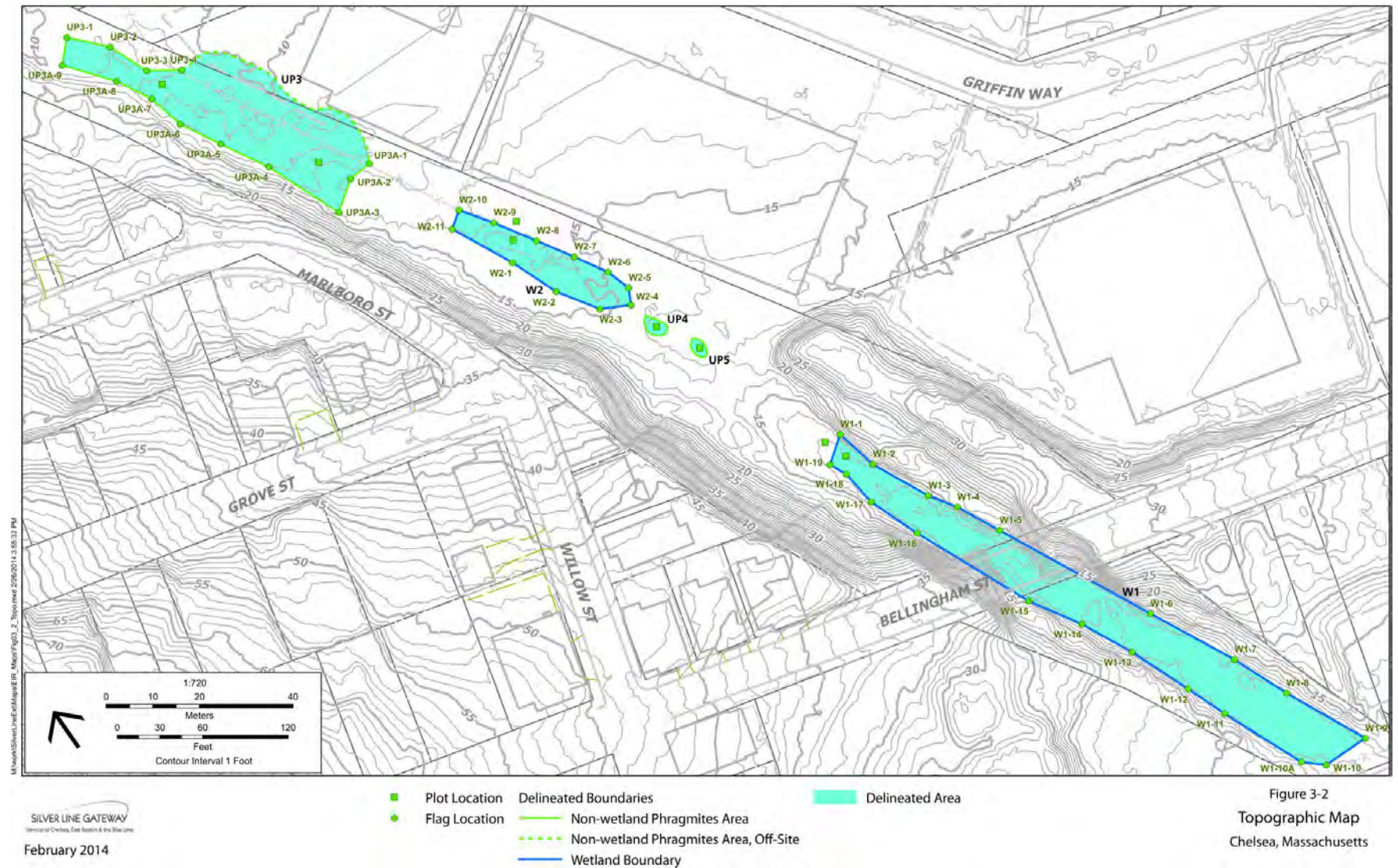
**Figure 3-1
Delineation Map
Chelsea, Massachusetts**



SILVER LINE GATEWAY
Service to Chelsea, East Boston & the Blue Line

February 2014

Figure 3-2: Topographic Map, Chelsea



3.1 401 Alternatives Analysis

The Secretary's Certificate on the Expanded ENF notes that the isolated vegetated wetlands (IVW) impacts "cannot be avoided if the project is to be located in the former Grand Junction railroad right-of-way, as compared to a project alternative that would operate on existing city streets." The 401 WQC application (provided in its entirety in Appendix B) repeats the Alternatives Analysis Screening summary (Expanded ENF sections 4.2.1, 4.2.2 and 4.2.3), Transit Operations Summary (section 4.3), Resource Summary (section 4.4) and Comparison Summary table (Table 4.5-1, repeated below as Table 3.1-1) contained in the Expanded ENF.

Table 3.1-1: Comparison Summary / Alternatives Analysis

Topic	Alternative 1 Busway to Mystic Mall	Alternative 2 Busway to Bellingham Square	Alternative 3 On-Street to Everett Avenue
Transit Operations Summary			
Travel Time	√		
Ridership			
Total Daily Ridership	√		
New Transit Trips	√		√
Local Bus Capacity	√		
Fleet Size	√	√	
Parking	√		
Cost			√
Resource Summary			
Consistency with State, Regional and Local Plans	√		
Environmental Justice			
Access to Jobs	√		
Access to Health Care and Educational Facilities			√
Mobility	√		√
Air Quality	√	√	√
Land Use / Demographics	√		
Hazardous Materials			√
Utilities			√
Transportation	√		
Noise/Vibration	√		
Air Quality	√	√	
Wetlands			√
Stormwater Management			√
Chapter 91	√	√	√
Massachusetts Coastal Zone			√
Historic / Archaeological	√		
Construction Impacts			√
Public and Stakeholder Support	√		

Note: A check mark (√) identifies the alternative with the highest benefit or least impact, as appropriate.

Check marks for more than one Alternative in a single topic indicate that benefits or impacts will be equal for those Alternatives.

While the On-Street to Everett Avenue Alternative compares favorably to the Preferred Alternative (Busway to Mystic Mall) on some criteria, such as capital costs and certain resource impacts, it is similar or inferior on the others. The analyses performed as input to the comparison summary table used in the alternatives screening process did not assign weight to the variables. For the few criteria where the Preferred Alternative has higher cost or greater potential adverse impacts the overall benefits remain high, particularly long-term. The construction phase impacts will be mitigated and the Preferred Alternative provides the greatest capacity for transit ridership growth and support to economic development in Chelsea.

The Alternatives Analysis determined that Alternative 3, which would operate within the curb lines of existing city streets in Chelsea, would provide slower travel times, lower transit ridership, lower reliability, and significant loss of scarce residential and retail on-street parking compared with the other alternatives. Moreover, the analysis determined Alternative 3 would not be capable of providing the transit operating environment and passenger amenities (e.g., exclusive operating right-of-way, wider station spacing and raised platform floors) considered essential to implementing true BRT service – a core project goal - without major adverse impacts to the neighborhood, particularly along Central Avenue and Hawthorn Street such as the elimination of resident only on-street parking and right-of-way impacts at BRT stop locations. It is also noted that Alternative 3 was viewed negatively by most participants in the major public meetings and smaller stakeholder meetings held in Chelsea throughout the Alternatives Analysis.

Additional relevant information is provided regarding how the alternatives compared under the following criteria:

Consistency with State, Regional and Local Plans

The Preferred Alternative is entirely consistent with all relevant state, regional, and local plans (plans, policies, and initiatives), and is strongly supported by the City of Chelsea. At the state level the relevant plans, policies, and initiatives include:

- Urban Ring Phase 2 RDEIR/DEIS, Notice of Project Change, and associated MEPA Certificates
- MassDOT purchase of the former Grand Junction Railroad (GJRR) right-of-way
- GreenDOT Policy and Healthy Transportation Initiative
 - The Way Forward transportation funding plan
 - Gateway Cities

The Preferred Alternative follows an alignment in the City of Chelsea consistent with the proposed BRT busway alignment identified in the Urban Ring Phase 2 Revised Draft Environmental Impact Report/Draft Environmental Impact Statement (RDEIR/DEIS) issued in November 2008. The recommended BRT alignment in Chelsea was confirmed in the Urban Ring Phase 2 Notice of Project Change (June 2009) in which the proposed busway alignment in Chelsea was identified as part of the early action “Northern Tier” of the proposed BRT service. MEPA issued Certificates on both the RDEIR/DEIS and the Notice of Project Change (EOEA #12565). The alignment of the busway was modified during the Alternatives Analysis for this project in 2013 to extend the busway the full length of the MassDOT owned former GJRR right-of-way. This modification was made because the busway connection with Griffith Way identified in the prior planning was no longer feasible nor preferred by the City of Chelsea.

MassDOT’s purchase of the former GJRR right-of-way from CSX, which occurred a few years ago, was the culmination of a long-planned effort to secure this strategic right-of-way and preserve it for future transportation use. Using the right-of-way for a new BRT busway is consistent with the purposes for which it was purchased.

MassDOT's GreenDOT initiative is driven by the goals of reducing greenhouse gas (GHG) emissions, promoting the healthy transportation options of walking, bicycling, and public transit, and supporting smart growth development. The Preferred Alternative best supports the primary goals of GreenDOT. The On-Street Alternative has lower benefits for GHG reduction, provides no facilities for supporting walking or bicycling, and would provide far less incentive or opportunity for smart growth around its proposed station locations.

In compliance with the Healthy Transportation Initiative and Policy Directive, the Preferred Alternative will provide for strong connections between the busway and the shared-use path, which the On-Street alternative cannot achieve. The shared-use path will provide opportunities for residents and employees to reach the City of Chelsea and the BRT stations easily without using an automobile.

The Way Forward Transportation Funding Plan calls for the development of innovative BRT demonstration projects, particularly those where BRT can be implemented and meet BRT industry standards and best practices. The Preferred Alternative also supports the Commonwealth's Gateway Cities program by providing a new BRT station at the site of the existing commuter rail station, which provides residents of the surrounding neighborhoods with significantly improved transit access and mobility to reach educational and employment opportunities. Moreover, the shared-use path component of the project provides additional access and mobility options, again consistent with plans prepared in Chelsea under the Gateway Cities program.

At the regional level the Preferred Alternative is most consistent with the Long-Range Transportation Plan and best supports Transit Oriented Development (TOD) potential in the corridor, particularly the redevelopment of the Eastern Avenue corridor in Chelsea north of Central Avenue. Moreover, the MAPC comment letter on the EENF strongly supports the Preferred Alternative and cites several key features of the alternative and why they are important to the future of Chelsea and the region.

At the local level the City of Chelsea is and remains a strong and consistent supporter of the Preferred Alternative.

Transportation

The Preferred Alternative will meet many of the key criteria under the BRT industry best practices, including many of the key "BRT Standard" criteria issued by the Institute for Transportation & Development Policy (ITDP). By comparison, the On-Street Alternative would not meet any of the BRT Standard criteria, which are important for service quality and schedule reliability.

Stakeholder Support

As summarized in the EENF, the project has held four general public meetings, multiple neighborhood and stakeholder meetings. Support for the Preferred Alternative is consistently very strong.

3.2 Wetlands Evaluation

3.2.1 Nexus to Navigable Waters (USACOE 404b Permit)

There are two storm drains within Cottage Street that discharge into the Chelsea River, a Traditional Navigable Water (TNW) located approximately 1000 feet away from the project site. LiDAR topographic data obtained from MassGIS indicate that the former GJRR right-of-way elevations slope gently towards Cottage Street (Figure 3, Appendix B), from elevation 15-feet at the southern extent of wetland W2 to elevation 11-feet at the southern extent of wetland W1 in the vicinity of Cottage Street. On January 17,

2014 during a site visit with the MassDEP, ACOE and MassDOT, surface water flow from wetland W1 into one of the storm drains was observed, and consequently it was inferred that a nexus exists between the wetlands and the Chelsea River. During periods of lower water elevations, physical indicators supporting the nexus determination include leaf staining and the presence of a water-mark on an eroded bank potentially caused by ponded water observed near wetland flag W1-10 at the southern extent of wetland W1. The ACOE asserts jurisdiction over every water body that is not a relatively permanent water body (RPW) if that water body is determined (on the basis of a fact-specific analysis) to have a significant nexus with a TNW.

3.2.2 Wetland Functions and Values

A Wetland Functions and Values Assessment (FVA) was conducted on November 15, 2013 in accordance with *U.S Army Corps of Engineers' Highway Methodology Workbook Supplement (ACOE, September 1999)*. The wetlands identified as W1 and W2 in Figures 3-1 and 3-2 are demarcated by wetland flags W1-1 through W1-19, and W2-1 through W2-11, respectively. These wetlands are predominantly isolated Palustrine emergent wetland systems with persistent vegetation that are seasonally flooded/saturated (PEM1E). Wetlands W1 and W2 are capable of Sediment /Toxicant Retention and Nutrient Removal, given the surrounding impervious landscape, substantial stormwater runoff, and existing herbaceous vegetation community. Wetlands W1 and W2 are also capable of providing Wildlife Habitat as the wetlands provide refuge in an otherwise densely developed residential and commercially zoned urban area. Common suburban opportunistic songbirds such as black-capped chickadee (*Poecile atricapillus*), American crow (*Corvus brachyrhynchos*), hermit thrush (*Catharus guttatus*), house sparrow (*Passer domesticus*) American robin (*Turdus migratorius*), and bluejay (*Cyanocitta cristata*) were directly observed and suburban mammals, including eastern gray squirrel (*Sciurus carolinensis*) and raccoon (*Procyon lotor*) were observed directly and indirectly. These functions, however, are not considered principal functions as they are limited by small size of the two wetlands- (10,748 square feet (sf) and 3,050 sf, respectively), minimal topographic relief, and fragmentation, as well as the amount of debris and anthropogenic disturbance and vandalism. Overall, they are not considered an important physical component of a larger wetland ecosystem and are not considered of special value from a local, regional or national perspective.

3.2.3 Vegetated Wetlands Impacts

In the area of the two vegetated wetlands the elevation of the proposed roadway will be up to two feet higher than the existing ground elevation. Any material which is to be stockpiled on site will be surrounded by silt fence and compost filter tubes to contain and minimize sediment flow during rain events.

Construction related activities will result in the complete removal of shrubs and herbaceous vegetation, including biomass such as stumps and root systems within the two vegetated wetlands. Although there are no large trees located within the vegetated wetlands, tree canopy within the right-of-way will be removed.

All existing soil material, which has begun to accumulate within the interstitial space of the railroad ballast due to inundation and other pedogenic (soil forming) processes, will be excavated from the area, and the leaf litter and duff layers will also be removed. The construction of the busway within the right-of-way will include the excavation of existing soil and materials, the placement and compaction of roadway subgrade material as well as grading for the stormwater swale and adjacent areas. Final paving of the busway will result in an increase of impervious surfaces within the right-of-way.

3.2.4 Wetlands Function and Values Impacts

It is anticipated that the construction related activities proposed to occur within the two vegetated wetlands will eliminate that resource area's ability to recharge groundwater, retain sediments and toxins that may enter the wetlands from upland areas, and remove nutrients.

The loss of vegetation in the two vegetated wetlands will result in a reduction of any hard and soft mast that may be used by wildlife species present in the right-of-way as well as perching and nesting sites for birds, and areal vegetative cover. The reduction of dead standing woody material and the removal of downed woody debris within the right-of-way would reduce the habitat value for both primary excavators and secondary cavity users, which include a variety of species from mammals commonly found in urbanized areas such as raccoons and the eastern gray squirrel as well as common suburban opportunistic songbirds like the black-capped chickadee and American crow.

3.3 Wetland Replication and Management Plan

A wetland replication and mitigation plan has been developed that will restore any wetland functions and values lost as a result of the construction of the BRT within the former GJRR right-of-way. As discussed above in Section 3.2.2, Wetlands W1 and W2 do not possess any principal functions and are not considered important components of a larger wetland ecosystem. The two wetlands are, however, capable of providing Sediment/Toxicant Retention, Nutrient Removal, and Wildlife Habitat.

3.3.1 Wetland Replication

The wetland replication plan includes the construction of a network / series of biofilter stormwater management swales alongside the BRT within the former GJRR right-of-way. Approximately 13,798 sf of isolated vegetated wetlands will be permanently altered as a result of constructing the BRT. The proposed stormwater BMP's will create a replication area measuring approximately 14,125 sf in size, thereby providing a replication to disturbance ratio of slightly greater than 1:1. The existing water quality and habitat functions will be replaced as part of the proposed stormwater management system design described below. The swales will be vegetated to improve aesthetic values and increase the potential for utilization by urban songbirds, while providing a food source in the form of hard/soft mast and fruits associated with native herbaceous, shrub, and tree species.

3.3.1.1 Grading and Hydrology

In order to restore the pre-remediation hydrologic conditions, the final grades of the BRT and shared-use path have been designed to direct stormwater runoff towards the biofilter stormwater management swales. The planned hydrology for the replication area will be primarily supplied by sheetflow from the paved surfaces of the BRT and shared-use path. Currently the two isolated vegetated wetlands located within the former GJRR right-of-way derive their hydrology from rain events and stormwater runoff, and the grading of the BRT to direct stormwater flows to the replication area will mimic this condition. It is anticipated that the redirection of surface flows and subsequent groundwater discharge will provide suitable root zone saturation and inundation to successfully restore palustrine wetland hydrological conditions within the biofilter swales.

3.3.1.2 Soil Structure

The existing soils located within the two isolated vegetated wetlands to be filled consists of a coarse railroad bed gravel (2-4" across in size) with no fine component (i.e., sand, silt or clay). Soils consisting of a fine sandy loam fill the interstices of the coarse railroad bed gravel. Replicating these soil conditions

within the proposed biofilter swales would be impractical; therefore the proposed replacement wetland soil will be procured from a suitable vendor and will be fabricated to meet as closely as practicable the specific textures and contents of typical palustrine wetland soils. It is anticipated that the man-made soils will consist of a mineral topsoil and leaf compost organic admixture, and will be void of invasive species seed. This material will be both physically and chemically clean, and efforts will be made to ensure material brought in adheres to the appropriate organic carbon and matter content.

3.3.1.3 Planting Plan

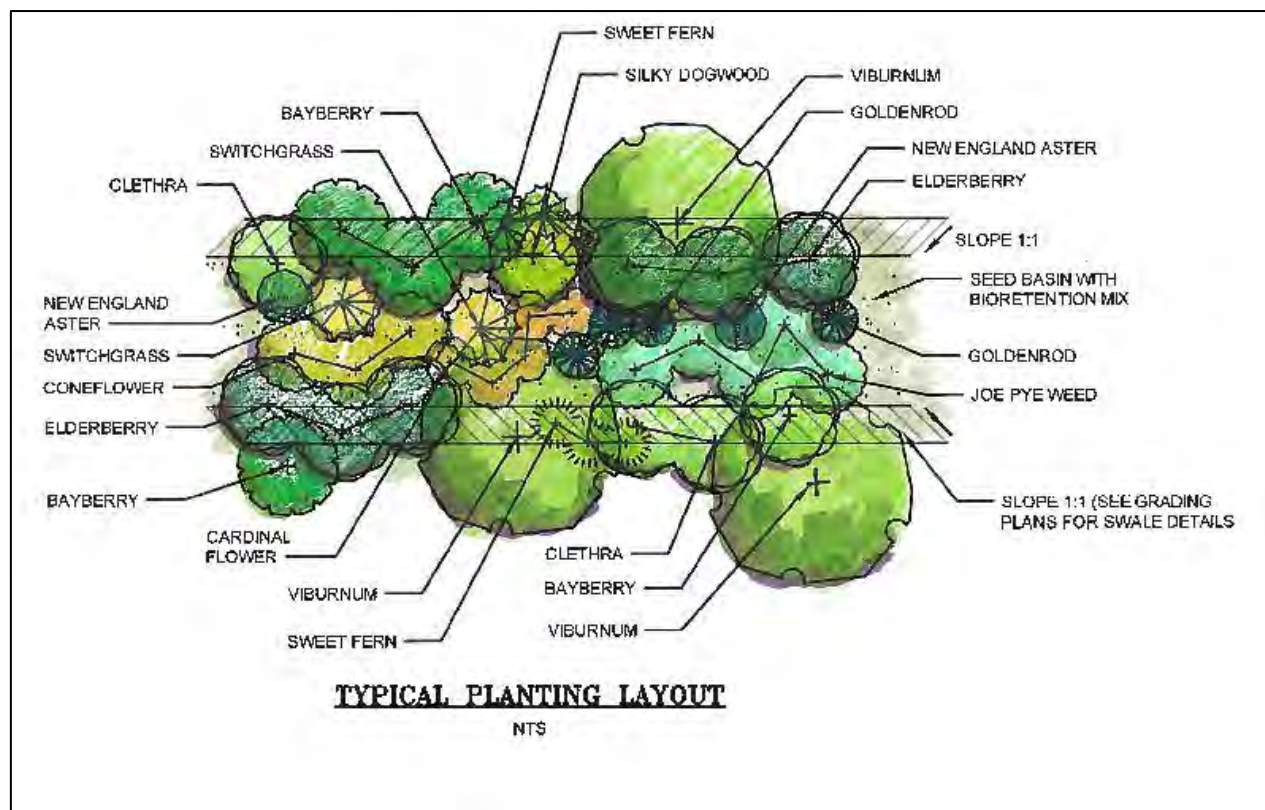
The replication plantings will replace the existing wetland resource area habitats within the former GJRR right-of-way. The locations and configurations of the proposed biofilter stormwater swales are presented on the plans located in Appendix B.

To stabilize soils and restore the vegetative communities within the biofilter stormwater swales, seed mixes as well as plantings are proposed. The species depicted below in Table 3.4-1 were selected to provide mix of plants and species of high value to wildlife, and exclude invasive and other unacceptable plant species. A typical planting detail has been provided in Figure 3.3-1.

Table 3.3-1: Plant List for Biofilter Swale

	Botanical Name	Common Name	Wetland Indicator Status
Shrubs	Clethra alnifolia	Sweet Pepperbush	FAC+
	Cornus amomum	Silky Dogwood	FACW
	Myrica pensylvanica	Bayberry	FAC
	Sambucus canadensis	Elderberry	FACW (not on 2013 listing)
	Viburnum cassinoides	Witherod Viburnum	FAC (closest nannyberry – <i>lentago</i>)
Herbaceous Plants	Asclepias tuberosa	Butterfly Milkweed	NA
	Aster novae-angliae	New England Aster	FACW
	Comptonia peregrina	Sweet Fern	UPL (not listed)
	Eupatorium purpureum	Joe Pye Weed	FAC
	Lobelia cardinalis	Cardinal Flower	OBL
	Panicum virgatum	Switchgrass	FAC
	Rudbeckia laciniata	Coneflower	FACW
	Solidago sempervirens	Goldenrod	FACW
Seed Mix	40% Virginia Wildrye	Ulymus virginicus	FACW
	29% Fox Sedge	Carex vulpinoidea	OBL
	10% Little Bluestem	Schizachyrium scoparium	FACU
	10% Switchgrass	Panicum virgatum	FAC
	5% Autumn Bentgrass	Agrostis perennans	FACU
	3% Soft Rush	Juncus effusus	OBL
	2% Rough Bentgrass	Agrostis scabra	FAC
	1% Path Rush	Juncus tenuis	FAC

Figure 3.3-1: Typical Planting Plan



3.3.2 Wetland Mitigation

The goal of the mitigation plan is to provide 1:1 mitigation for those wetland functions and values that will be directly affected by soil excavation during construction. The proposed wetland replication plan includes the installation of biofilter stormwater swales (a stormwater Best Management Practice (BMP)) to replicate the impacted wetland functions and values, and to manage stormwater from the proposed project. The proposed BMP's will improve water quality within the watershed by providing treatment and attenuation of stormwater runoff before discharging to the existing stormwater management system which eventually discharges to the Chelsea River. The existing ground surface within the right-of-way consists of tightly compacted railroad ballast which minimizes the infiltration of runoff, resulting in the discharge of untreated stormwater to the city's storm drainage system and eventually the Chelsea River. The BMP's ability to recharge groundwater, retain sediments and toxins that may enter the wetlands from upland areas, and remove nutrients prior to discharging to the city's storm drainage system will result in an improvement to water quality.

Wetland W1 and W2 both have a densely vegetated herbaceous layer populated by invasive species, including Purple Loosestrife (*Lythrum salicaria*) and Phragmites (*Phragmites australis*). Additionally, both of the existing wetlands contain a sparsely vegetated tree and shrub component. The proposed plantings within the biofilter stormwater swale will consist of a diverse mix of native plants that are of high value to wildlife. The proposed plantings will enhance wildlife habitat within the right-of-way by providing hard and soft mast that can be used by wildlife species currently found in the area as well as providing perching and nesting sites for birds.

4 Stormwater Management

From the Secretary's Certificate on the Expanded ENF:

"The EENF provided a conceptual description of the stormwater management plan for the project. The Single EIR should evaluate stormwater runoff impacts during construction and post-construction in greater detail, including plans showing the design of the post-construction drainage system designed in compliance with the stormwater management regulations. The EENF indicates that most of the project will be new development; therefore, MassDOT must demonstrate in the Single EIR that the relevant sections of the wetland regulations will be fully met. The Single EIR should also demonstrate that the pre-treatment and structural stormwater Best Management Practices (BMPs) will be met to the maximum extent practicable for the redevelopment portions of the project, as directed in MassDEP's comments.

Additionally, the Single EIR should explain how water quality and quantity impacts would be controlled in accordance with the standards in the stormwater management regulations, including source controls, pollution prevention measures, and erosion and sedimentation controls during construction. Overall, the Single EIR should demonstrate through calculations, stormwater system design plans, BMP designs and any supporting information, that the stormwater system will provide adequate protection for wetland resources in conformance with the stormwater regulations and the NPDES permit. MassDOT should also consider implementation of low impact development (LID) techniques and integrated management practices (IMP), as noted in MassDEP's comments."

4.1 Stormwater Summary

Since the Certificate was issued on the Expanded ENF, a site visit and discussion with the MassDEP and USACOE occurred on January 17, 2014. As a result, it was determined that the entire project is classified as a redevelopment project since the project corridor was previously used as an active railroad line, and remnants of the previous use still exist. The references in the Expanded ENF to New Development standards was a conservative approach since discussions and a site visit with MassDEP and ACOE occurred after the submission of the EENF document. The majority of the project area consists of railroad ballast overgrown with vegetation. The majority of the railroad right-of-way south of Cottage Street is already paved and there are portion of the railroad right-of-way north of Griffin Way which still contain sections of railroad tracks. There are also numerous areas where the right-of-way contains packed gravel surfaces used for parking and walkways. As a redevelopment project, the project is required to meet the MassDEP Stormwater Standards 2, 3, 4, 5 and 6 to the maximum extent practicable, and improve upon existing conditions.

The location of the proposed project and the limited right-of-way propose a challenge for developing a stormwater design that does not increase the runoff from the project area. The proposed drainage design has been developed to meet the MassDEP Stormwater Standards 2, 3, 4, 5 and 6 to the maximum extent practicable.

The project area can be divided into two segments. The western portion of the project corridor, from Everett Avenue to Broadway, (approximately half of the project area) is located adjacent to the active MBTA Newburyport/Rockport commuter rail line. The eastern portion of the project corridor, from Broadway to Eastern Avenue, is located within the abandoned railroad right-of-way. Runoff from the two segments will be treated differently. At the request of the MassDEP, and at the direction of the Secretary detailed supplemental stormwater plans are provided in Appendix C.

The proposed busway in the western portion of the project is sandwiched between the active railroad tracks to the north and commercial/business properties to the south. Due to these constraints, there is very limited land available for stormwater management. In this area, the stormwater runoff will be collected in a closed drainage system (catch basins with sumps and pipe network) and connected to the existing city stormwater collection systems located within Everett Avenue, Spruce Street, Sixth Street, Griffin Way and Cottage Street. There are a few locations where leaching basins are being proposed to provide groundwater recharge and to reduce the peak runoff where the soils are suitable and groundwater elevations are not too high.

The portion of the proposed project in the abandoned railroad right-of-way includes the new busway, 2 new BRT Stations, and a shared-use path including various retaining walls to support the path. This segment of the project area has right-of-way available to provide some stormwater management. In this area, a biofilter swale is being proposed to provide treatment and detain runoff. The busway sections adjacent to the swale will not be curbed, allowing runoff from the busway to flow into the swale. The runoff from the shared-use path will also flow via sheet flow into the swale.

The swale will consist of vegetation (grasses, plants and shrubs) underlain with a filter soil mix, filter fabric and a perforated pipe surrounded by crushed stone. Catch basins will be installed along the swale to facilitate runoff collection during larger storm events. The vegetation will provide treatment for the runoff, and the perforated pipe with crushed stone will promote infiltration. The system will collect, treat and recharge stormwater runoff from all frequent storm events, and will include an overflow system connected to the city storm drain system to discharge runoff during large infrequent storm events.

Runoff from the segment of the busway and shared-use path located east of Cottage Street will be collected in a closed drainage system. In this area, the right-of-way is just wide enough for the busway and the shared-use path, without room for a biofilter swale. There is an existing detention area serving the Massport employee parking garage which will be relocated as a result of the project. The relocated detention area will also collect runoff from a portion of the busway and shared-use path.

4.1.1 Existing Conditions and Proposed Stormwater Management

When purchased by MassDOT, the former GJRR has been abandoned for a number of years. Some portions of the original track still remain, but the majority of the site consists of ballast overgrown with vegetation. In the area of the proposed busway, the existing ground surface is very compacted, which minimizes the infiltration of runoff. The two isolated wetland areas are located within the abandoned portion of the railroad right-of-way. Both of the isolated wetlands areas eventually discharge to the city's storm drainage system. Wetland 1 discharges to an existing catch basin in Cottage Street and Wetland Area 2 discharges to an existing catch basin in Griffin Way.

Based on field survey (June 4, 2013), the wetlands areas have very limited storage volume. The table below summarizes the existing stormwater storage volume:

Table 4.1-1: Storage Volume – Existing Wetlands

	Storage Volume (cf)
Wetland 1	472
Wetland 2	109
Total	581

The runoff from the proposed busway and shared-use path will be routed to biofilter swales located adjacent to the busway within the BRT right-of-way. The biofilter swales will consist of native plant material, soil mix, crushed stone and a perforated drain pipe. Based on soils information, the existing soils are not very permeable. The perforated drain in the biofilter swale will be connected to a closed drainage system such that any runoff which is not infiltrated will be carried to the closed drainage system. The biofilter swale will be approximately five feet wide.

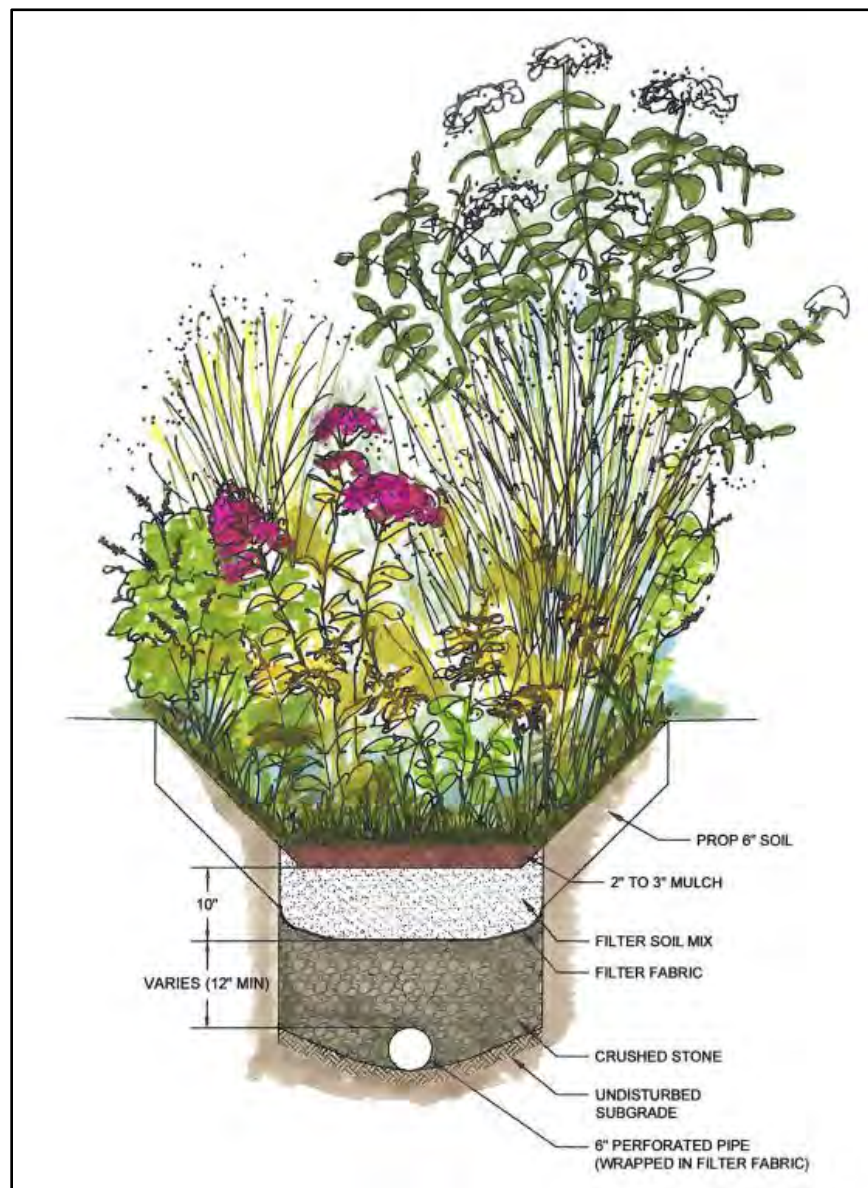
In the project area between Griffin Way and Cottage Street, there will be approximately 1,750 linear feet of biofilter swale. The swale will have the following storage volume:

Table 4.1-2: Storage Volume – Proposed Swale (Griffin Way to Cottage Street)

	Storage Volume (cf)
Surface Storage	5,860
Subsurface Storage	8,750
Total	14,610

The proposed biofilter swale (Figure 4.1-1) will provide treatment and infiltration, which are not provided under current conditions. Refer to Figure 3.3-1 for the typical planting plan.

Figure 4.1-1: Biofilter Swale



4.1.2 Impacts During Construction

During construction it is expected that the Contractor will access the portions of the project corridor adjacent to the active railroad at the existing at-grade crossings (located at Everett Avenue, Spruce Street and Arlington Street). Access to the portions of the project along the abandoned right-of-way will be attained at Highland Street, Griffin Way and Cottage Street.

Source controls, pollution prevention measures and erosion and sediment controls will be implemented. The contractor will be required to construct temporary gravel construction entrances to minimize sediment being tracked onto the local roadways. Prior to beginning construction, the Contractor will install silt fence along the perimeter of the site where the elevation of the site is higher than the adjacent property. Silt sacks will be installed in the existing catch basins down gradient from the work area. The silt sacks will be inspected periodically and cleaned/replaced as needed.

Any material which is to be stockpiled on site will be surrounded by silt fence and compost filter tubes to contain and minimize sediment flow during rain events.

An erosion and sedimentation control program will be implemented to minimize construction related impacts in conformance with the National Pollution Discharge Elimination System (NPDES) Construction General Permit (CGP). The construction erosion and sedimentation control program also incorporates Best Management Practices (BMPs) specified in guidelines developed by the DEP and presented in the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials* (DEP, 1997) and U.S. Environmental Protection Agency (EPA) document, *Interim Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites* (Office of Water Report EPA 833-R-060-04, 2007).

Proper implementation of the erosion and sedimentation control program will:

1. Minimize exposed soil areas through sequencing and temporary stabilization;
2. Place structures to manage stormwater runoff and erosion; and,
3. Establish a permanent vegetative cover for other forms of stabilization as soon as practicable.

Non-Structural Practices

Non-structural practices to be used during construction include temporary stabilization, temporary seeding, permanent seeding, pavement sweeping, and dust control. These practices will be initiated as practicable in appropriate areas at the site.

Temporary Stabilization

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be covered with a layer of straw mulch.

Permanent Seeding and Landscaping

Upon completion of final grading, any areas not covered by pavement will be seeded with a native upland seed mix and planted with native shrubs.

Pavement Sweeping

Project roads shall be swept as needed during construction. The sweeping program will remove sediment and other contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater (per *Demonstration of Nonpoint Pollution Abatement through Improved Street Cleaning Practices*, U.S. EPA, 1979). A street sweeper shall be kept at the site or at a nearby location to facilitate this practice. Once construction has been completed, sweeping at the project site will occur as required under the Operation and Maintenance Plan.

Structural Practices

Structural erosion and sedimentation controls to be used on the site include barriers and catch basin inlet protection.

Erosion Control Barriers

Prior to any ground disturbance, an erosion control barrier will be installed at the down gradient limit of work. As construction progresses, additional barriers will be installed around the base of stockpiles and other erosion prone areas. The barriers will be entrenched into the substrate to prevent underflow.

If sediment has accumulated to depth which impairs proper functioning of the barrier, it will be removed by hand or by machinery operating upslope of the barriers. This material will be either reused at the Site or disposed of at a suitable offsite location. Any damaged sections of compost filter tube or other erosion control devices will be repaired or replaced immediately upon discovery.

Catch Basin Inlet Protection

The inlets of existing and proposed catch basins will be protected from sediment inflow during the work period by surrounding them with a barrier of staked hay bales or by installing inlet protection sacks. If hay bales are used, a layer of non-woven filter fabric shall be placed beneath the grate of each basin. If sediment that has collected behind the barrier to a point where it impairs proper functioning, it will be removed and will be either reused onsite or disposed of at a suitable offsite location.

4.2.2 Post-Construction Impacts

The following section summarizes the pre-development and post-development conditions.

Pre-Development Conditions

There is no evidence of a closed drainage system within the railroad right-of-way. Based on available information, it appears that stormwater runoff from the right-of-way eventually makes its way into the closed drainage systems in the adjacent roadways, with the exception of two areas. The first area is a portion of the right-of-way at the end of Highland Street. This area appears to drain towards the Massachusetts Water Resources Authority (MWRA) parking area. The second area is the section of right-of-way located south of Cottage Street. This section of the right-of-way is already paved and drains toward the catch basins located on the adjacent property at 50 Eastern Avenue.

For the pre-development condition, the project area was divided in the following sub-catchment areas. Each sub-catchment area coincides with a design point:

- Area A – flow from southern section of railroad right-of-way (and adjacent property) to Everett Ave
- Area B – flow from southern section of railroad right-of-way (and adjacent property) to Spruce Street
- Area C – flow from southern section of railroad right-of-way (and adjacent property) to Arlington Street
- Area D – flow from southern section of railroad right-of-way (and adjacent property) to the MWRA parking area
- Area E – flow from railroad right-of-way (and adjacent property) to Griffin Way
- Area F – flow from railroad right-of-way (and adjacent property) to Cottage Street

In the post-development condition, along the area where the busway runs adjacent to the active railroad tracks, a concrete barrier will be constructed which will minimize runoff from the railroad tracks from entering into the busway drainage system. Because of this condition, the pre-development sub-catchment areas have been limited to the area south of the proposed concrete barrier.

The following table summarizes the pre-development runoff rates for the various design points.

Table 4.2-1: Pre-Development Peak Runoff Rate

Design Point	Peak Runoff Flow (cfs)		
	2-year	10-year	100-year
Everett Avenue	0.1	0.3	0.5
Spruce Street	0.3	0.7	1.3
Arlington Street	2.0	4.1	7.4
MWRA Parking Area	1.8	3.4	6.2
Griffin Way	1.3	2.7	4.9
Cottage Street	1.2	2.2	3.9

Post-Development Conditions

For the post-development conditions, 33 sub-catchment areas have been defined. The following are the design points:

- Everett Avenue
- Spruce Street
- Arlington Street
- Griffin Way
- Cottage Street
- Detention area (at Eastern Ave and Central Ave.)

The following table summarizes the post-development runoff rates for the various design points

Table 4.2-2: Post-Development Peak Runoff Rate

Design Point	Peak Runoff Flow (cfs)		
	2-year	10-year	100-year
Everett Avenue	0.4	0.6	1.0
Spruce Street	0.4	0.6	1.0
Arlington Street	1.0	1.5	2.3
MWRA Parking Area	0	0	0
Griffin Way	2.7	5.1	10.2
Cottage Street	2.1	4.0	7.1

Note: In the post-development condition, no runoff is being directed to the MWRA parking area.

Table 4.2-3: Differences between Peak Runoff Rates: Pre-Development vs. Post-Development

Design Point	Peak Runoff Flow (cfs)		
	2-year	10-year	100-year
Everett Avenue	+0.3	+0.3	+0.5
Spruce Street	+0.1	-0.1	-0.3
Arlington Street	-1.0	-2.6	-5.1
MWRA Parking Area	-1.8	-3.4	-6.2
Griffin Way	+1.4	+2.4	+5.3
Cottage Street	+0.9	+1.8	+2.8

The proposed project results in an increase in runoff at 4 design points for the 2-year storm event and at 3 design points for the 10-year and 100-year storm events. The proposed project results in a decrease in runoff at 2 design points for the 2-year storm event and at 3 design points for the 10-year and 100-year storm events. The increase has been mitigated to the extent practicable based on the urban project location, the suitability of the soils and the topography of the area.

4.3 Proposed Development

As stated above, the design of the proposed project has been developed to meet the applicable MassDEP stormwater standards. Copies of the 25% design plans are included in Appendix A. Sheets 37-51 show the layout of the proposed drainage system.

4.4 Regulatory Compliance

The project will comply with the special conditions stipulated in the issued Section 401 Water Quality Certificate under 314 CMR 9.06.

Based on discussions with USACOE and DEP, the proposed project can be defined as a redevelopment project since the project area was previously used (as an active railroad line) and there are remnants of the previous use. As a redevelopment project, the project is required to meet the MassDEP Stormwater Standards 2, 3, 4, 5 and 6 to the maximum extent practicable.

The stormwater performance standards developed by the MassDEP, and a brief discussion on how the proposed project will achieve the standards, are provided as follows:

Standard 1: No New Untreated Discharges

No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The proposed project will not include any new untreated stormwater conveyance systems. The stormwater runoff will be treated by structural and non-structural BMP's prior to discharge to the existing storm drainage system.

Standard 2: Peak Attenuation

Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. (This standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.)

Since the project is a redevelopment project, this standard will be met to the maximum extent practicable. There is limited area within the project corridor for stormwater detention/retention. As a result, biofilter swales are being provided to treat, detain and recharge runoff where possible. Where feasible, leaching catch basins are being proposed, specifically in areas where the subsurface soils are suitable for infiltration.

The proposed project results in an increase in runoff at 4 design points for the 2-year storm event and at 3 design points for the 10-year and 100-year storm events. The proposed project results in a decrease in runoff at 2 design points for the 2-year storm event and at 3 design points for the 10-year and 100-year storm events. The increase has been mitigated to the extent practicable based on the urban project location, the suitability of the soils and the topography of the area. Pre and post development peak runoff rates are found in Tables 4.2-1, 4.2-2 and 4.2-3, and the stormwater calculations are found in Appendix C.

Standard 3: Recharge

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on the soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Since the project is a redevelopment project, this standard will be met to the maximum extent practicable. Much of the area, particularly in the western portions of the corridor, consists of hard packed surfaces which provide little opportunities for recharge. Based on soil boring data, a majority of the soils on the site are classified as C and D soils, as such recharge is only required to the maximum extent practicable. As previously discussed, the proposed project will include the creation of biofilter swales, which will treat runoff and provide recharge where site conditions allow. Calculations for the recharge volume are included in Appendix C, and boring logs are located in Appendix D.

Standard 4: Water Quality

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when: a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained; b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Since the project is a redevelopment project, this standard will be met to the maximum extent practicable. The proposed project will include the installation of treatment chains in order to meet the 80% TSS removal standard where possible. Biofilter swales will be constructed and deep sump catch basins will be installed.

The sections of the project with swale has a TSS removal rate of 78%, the sections of the project with leaching basins has a TSS removal rate of 85%, the sections of the busway without leaching basins or a swale has a TSS removal rate of 25%. The majority of the project area has a TSS removal rate of approximately 80%. (The TSS Worksheets are included in Appendix C.)

The proposed project results in an increase of approximately 196,000 sf of impervious area (busway, station platforms, shared-use path, and ancillary access improvements). The water quality volume required to be treated is:

$$196,000 \text{ sf} \times 0.5" = 8,137 \text{ cf}$$

Approximately 1,970 linear feet of biofilter swale is being provided. The average swale width is 4.5 feet and the average depth will be 1 foot, resulting in a storage volume of:

$$1,970 \text{ ft} \times 4.5 \text{ ft} \times 1 \text{ ft} = 8,865 \text{ cf}$$

The proposed biofilter swale will provide the required water quality volume.

Standard 5: Land Uses with Higher Pollutant Loads

For land uses with higher potential pollutant loads, source control and pollution prevention must be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

This standard is not applicable. The proposed project is not considered a land use with higher pollutant loads.

Standard 6: Critical Areas

Stormwater discharges within the Zone II or Interim Wellhead protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

This standard is not applicable. The proposed project is not expected to discharge runoff to a critical area.

Standard 7: Redevelopment and other projects Subject to the Standards only to the extent practicable

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The project is considered a redevelopment project and will be required to meet the standards 2, 3, 4, 5 and 6 to the maximum extent practicable. The location of the proposed project and the limited right-of-way poses a challenge for developing a stormwater management system that utilizes large traditional stormwater basins.

Within the eastern portion of the project, space is available within the right-of-way to allow for the incorporation of the Low Impact Development (LID) BMPs (e.g. “country drainage” to biofilter swales).

The proposed busway in the western portion of the project is sandwiched between the active railroad tracks to the north and commercial/business properties to the south. Due to these constraints, there is very limited land available for open stormwater management structures. In this area, the stormwater runoff will be collected in a closed drainage system (catch basins with sumps and pipe network) and connected to the existing city stormwater collection systems located within Everett Avenue, Spruce Street, Sixth Street, Griffin Way and Cottage Street.

Standard 8: Construction Period Pollution Prevention and Erosion Control

A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

A Stormwater Pollution Prevention Plan will be prepared prior to the start of construction activities. During construction, erosion control devices including compost filter tubes and/or silt fences will be installed. Silt sacks will be installed in the existing catch basins downstream and adjacent to the project areas. During construction, land disturbance will be limited to minimize the potential for erosion and sedimentation. The erosion and sediment control devices will be inspected weekly and after rainfall events greater than a quarter inch in a 24-hour period. The devices will be maintained and repaired or replaced as required at the direction of the MassDOT Resident Engineer.

Standard 9: Operation and maintenance Plan (post-construction)

A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A long-term operation and maintenance plan will be developed for the maintenance of the stormwater management system. The following BMPs are proposed:

- Deep Sump Catch Basin
- Biofilter Swale
- Leaching Catch Basin
- Street sweeping/litter pick up
- Vegetation Management

Standard 10: Prohibition of Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

Based on available information, there are no known or suspected illicit discharges within the project limits. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), MassDOT shall be notified for assistance in determining the nature and source of the discharge, and for resolution through an Illicit Discharge Detection and Elimination (IDDE) program.

4.5 Stormwater BMPs

The proposed project has been designed with various BMPs. The BMPs include catch basins with deep sumps, leaching catch basins and biofilter swales.

4.5.1 Pre-treatment Stormwater BMPs

Pre-treatment BMPs include deep sump catch basins throughout the project area. Biofilter swales will also be constructed along the southern portion of the project area. The biofilter swale will provide treatment and will detain and/or recharge runoff.

4.5.2 Structural Stormwater BMPs

Deep sump catch basins with hoods are being installed throughout the project area. The inlet grate will prevent large debris from entering the closed drainage system and the sump will allow sediments to settle out.

4.6 Water Quality and Quantity Impacts

The proposed project is defined as a redevelopment project, therefore MassDEP Stormwater Standards 2 and 4 need to be met to the maximum extent practicable. As noted previously, the urban setting of the proposed project limits the possibility of providing extensive stormwater management system BMPs. The sections of the project with swale has a TSS removal rate of 78%, the sections of the project with leaching basins has a TSS removal rate of 85%, the sections of the busway without leaching basins or a swale has a TSS removal rate of 25%. The majority of the project area has a TSS removal rate of approximately 80%. TSS removal calculations worksheets for the various treatment chains are included in Appendix C.

The proposed biofilter swales along the southern sections of the busway will provide treatment and will also detain the runoff. Leaching basins are being proposed in the project area adjacent to the active rail road track in the areas where the existing soils are adequate for infiltration. These leaching basins will reduce the peak runoff from the proposed development. As indicated in Section 4.1.2, the proposed project will result in an increase in runoff at 4 of the 6 design points for the 2-year storm event and at 3 design points for the 10-year storm event. The increase in runoff has been mitigated to the maximum extent practicable based on the urban location.

4.7 Implementation of Low Impact Development (LID) Techniques

Low Impact Development (LID) techniques have been investigated throughout the project corridor and utilized where possible.

- In lieu of a closed system, where possible sheet flow will be directed to biofilter swales that will provide bioretention functions. The swales are consistent with the following LID measures: use of country drainage; water quality swale, and grass channels.
- Disturbance to existing trees and shrubs has been minimized to the maximum extent practicable.
- The station platform canopy design intent is to collect runoff from the canopies and route it to planting areas, tree boxes or rain gardens which will be considered at each station. These LID techniques will provide temporary detention, filtering and evapotranspiration. The design of station platforms and the canopies are being developed.
- The use of permeable pavers was considered for the shared-use path; however the characteristics of the existing soils in the area are not favorable.
- Open graded friction course pavement was considered as the BRT busway surface, but was determined to be not applicable for use on the busway due to the low volume limited access roadway and roadway geometry. Open graded friction course is being considered for the shared-use path.
- Green roofs were considered for the station canopies but are not feasible from an engineering perspective.
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5 Potential Infrastructure Impacts

From the Secretary's Certificate on the Expanded ENF:

"The MWRA prohibits the discharge of groundwater to the sanitary sewer system. Because the project would have access to storm drains, the discharge of groundwater to the sanitary sewer system associated with the project is prohibited. The Single EIR should discuss whether MassDOT intends to install gas/oil separators in any vehicle maintenance, storage or wash buildings that may be planned for the project. The Single EIR should also discuss whether the project would impact the MWRA's water and wastewater systems in the sections specified in its comments, and if so, disclose whether the project would require an 8(m) Permit."

5.1 Groundwater Discharge

The MWRA has expressed concern regarding the discharge of groundwater to the sanitary storm system via storm drains in the vicinity of the project. The Silver Line Gateway project will not discharge to the MWRA sanitary storm system: the project-related stormwater system is designed to avoid such discharges to the MWRA system. The stormwater system for the proposed project will be connected to the existing City of Chelsea drainage systems located in Everett Avenue, Spruce Street, Sixth Street, Griffin Way and Cottage Street.

5.2 Gas/Oil Separators Installation

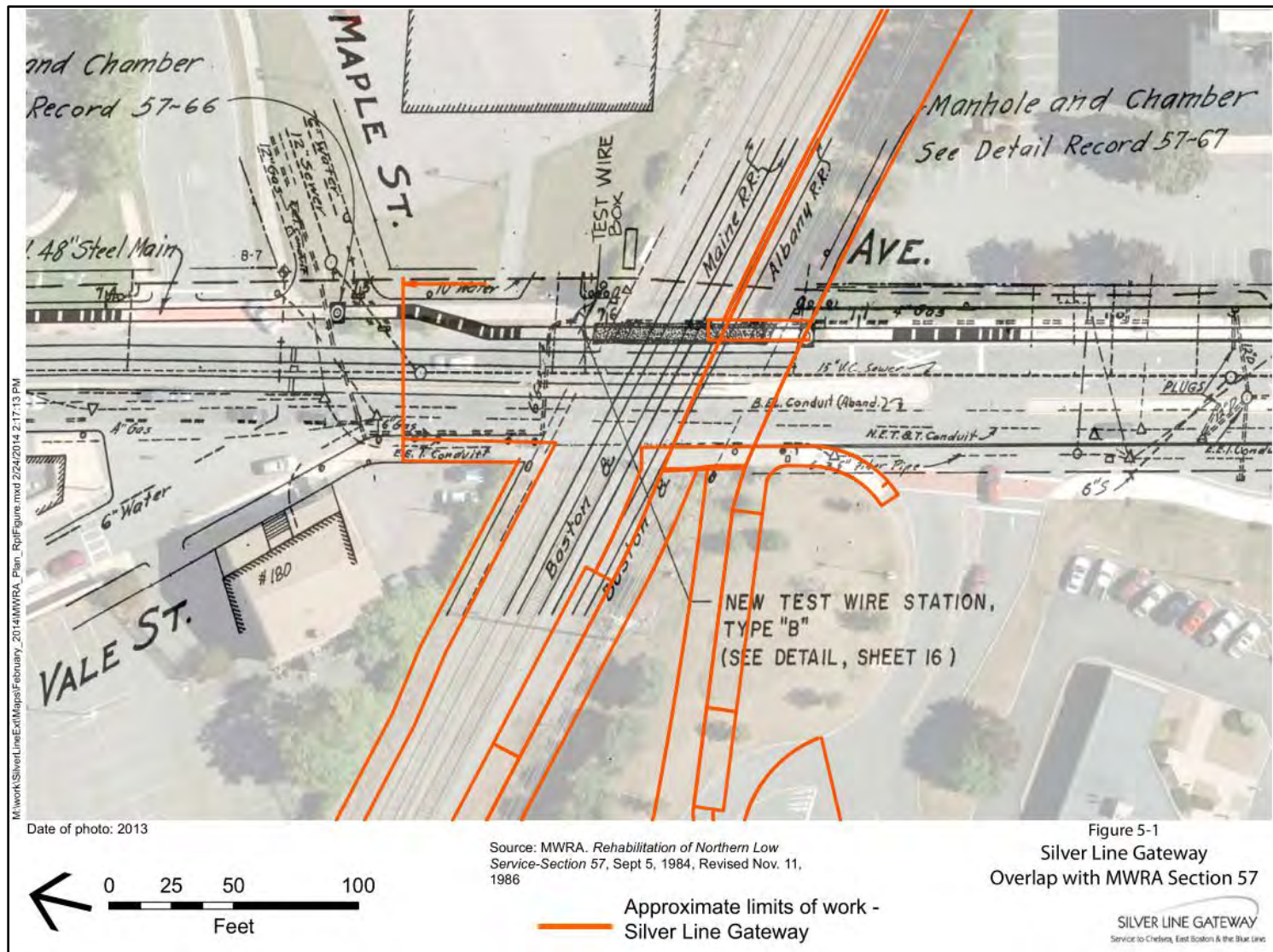
The proposed Silver Line Gateway project does not include the construction of any vehicle maintenance, storage or wash buildings. Maintenance, storage and wash functions will be conducted at existing MBTA facilities. As a result, the installation of gas/oil separators will not be necessary.

5.3 MWRA Water and Wastewater Impacts

MassDOT has identified MWRA water and wastewater infrastructure in the vicinity of the Silver Line Gateway project. The MWRA has expressed particular concern regarding sections 57, 8, 46 and 38 and has provided plans for those sections of its system.

The Silver Line Gateway construction will only overlap with the MWRA system in the vicinity of the commuter rail and busway crossing near the intersection of Everett Avenue with Vale Street and Maple Street (MWRA section 57), where construction will occur over an MBTA water line. Project-related construction will occur over an MWRA water line at this location. The Silver Line Gateway project will not be tying into the MWRA water line. Figure 5-1 combines the project plans with the MWRA section 57 plans. The MWRA water line is also identified on sheet 13 of the Silver Line Gateway construction plans (see Appendix A).

Figure 5.3-1: Silver Line Gateway Overlap with MWRA Section 57



5.4 8(m) Permit Requirement

The proposed construction mentioned previously in section 5.3 will require the filing of an 8(m) Permit with the MWRA. MassDOT will file an application with the MWRA, along with all required supporting documentation, and coordinate with the MWRA.

5.5 Other Infrastructure Impacts

The Expanded ENF (section 6.4, page 6-20) identified the need to coordinate with NStar regarding the relocation of up to eight (now six) overhead 115kv electric utility poles. NStar is in the process of redesigning these poles to include an extended mast arm that will minimize the distance that the overhead lines are required to move. The proposed locations of the new foundations and poles are identified on Sheets 13, 14, 17, 18 and 19 of the Silver Line Gateway construction plans (see Appendix A).

6 Greenhouse Gas Emissions

From the Secretary's Certificate on the Expanded ENF:

"This project is subject to review under the May 5, 2010 MEPA Greenhouse Gas Emission Policy and Protocol (GHG Policy). As a transit project intended to increase ridership and provide alternatives to driving, it may qualify for the de minimis exemption from the GHG Policy. The Single EIR should include a discussion of potential GHG emissions associated with the project to support use of the de minimis exemption. The GHG Policy requires that proponents quantify the project's GHG emissions and identify measures to avoid, minimize and mitigate these emissions. The EENF includes three alternatives for the project and indicates that Alternative 1 (Busway to Mystic Mall) will provide the greatest air quality improvements on a regional basis, as compared to the other two alternatives considered, although the difference in air quality improvements between the three project alternatives is relatively small. The project will require the operation of eight to ten dual-mode articulated buses. The Single EIR should quantify the additional GHG emissions that will be generated by the operation of these buses, which are expected to reduce traffic congestion, as compared to the No Build condition. The Single EIR should also address measures to reduce emissions associated with construction and operation, such as reducing idling of construction equipment or using alternative fuels to power construction vehicles. I encourage MassDOT to consult with the MEPA office and the Department of Energy Resources regarding the GHG analysis prior to submission of the Single EIR."

6.1 De Minimis Exception

The GHG Policy contains the following De Minimis Exemption:

"DE MINIMIS EXEMPTION

The MEPA Office acknowledges that some projects that require an EIR will have little or no GHG emissions, and this Policy shall not be applied to such projects. For any project that exceeds mandatory EIR thresholds at 301 CMR 11.03, the project proponent should specify in the ENF whether it believes that the project should be exempt pursuant to this de minimis exception. The Secretary will identify in the scoping Certificate whether a project requires a GHG analysis or whether it falls within this de minimis exception.

Examples of projects that may qualify for this de minimis exemption (subject to approval by the Secretary) include (but are not limited to) the following:

- Ecological restoration projects;
- Waterways dredging projects; and
- Dam repair or removal projects."

The Secretary's Certificate has directed MassDOT to discuss project-specific GHG emissions from the transit vehicles that will provide the Silver Line Gateway service between South Station and Chelsea in an effort to determine if the project will qualify under the De Minimis Exemption. Subsequent discussions with the MEPA Office indicate that the De Minimis Exemption will not be applied. Analysis of project-related GHG emissions is summarized in section 6.2.

6.2 GHG Emissions Compared to the No-Build Condition

6.2.1 Background

The air quality analysis provided by the Central Transportation Planning Staff (CTPS) and summarized in the Expanded ENF compared local (South Boston, East Boston and Chelsea neighborhoods) and regional (the 101 communities comprising the Boston Metropolitan Planning Organization) emissions for the 2035 No Build condition as well as for 2035 conditions with the three Silver Line Gateway alternatives in place. Those comparisons considered the differences in emissions on the local and regional highway network that will occur as a result of mode shift (passenger vehicle to transit) or shifts between transit services (commuter rail, bus and BRT) that would alter linked trips. The results indicated that Alternative 1, the Busway to Mystic Mall alternative (the Preferred Alternative), will provide the greatest air quality benefit of the three alternatives.

The original CTPS analysis did not isolate or include the emissions generated by the transit service itself, specifically from the eight-to-ten dual-mode articulated buses (DMAs) required to provide the proposed Silver Line Gateway service. Subsequent analysis has been provided by CTPS, and is summarized below. Revised modeling (February, 2014) using the MOVES² model has been provided by CTPS to reflect updated emissions factors. The complete emissions table is provided in Appendix E.

6.2.2 Transit-Only and Overall Project-Related Emissions

As requested in the MEPA Certificate, project-specific emissions generated by the proposed Silver Line Gateway service were compared to the No-Build condition. Table 6.2-1 summarizes the daily regional CO₂ emissions.

Table 6.2-1: 2035 Daily No-Build Regional CO₂ Emissions vs. Additional Silver Line Gateway Emissions

	2035 Daily Highway Emissions	Absolute Change from 2035 No-Build		2035 Daily Transit Emissions Only	Absolute Change from 2035 No-Build	2035 Daily Highway + Transit Emissions (Combined)	Absolute Change from 2035 No-Build
CO₂ (kg/day)							
2035 No-Build	41,332,553			518,160		41,850,713	
2035 Build SLG Alt 1	41,328,370	-4,183		520,770	2,610	41,849,140	-1,573
2035 Build SLG Alt 2	41,329,613	-2,940		520,710	2,550	41,850,323	-390
2035 Build SLG Alt 3	41,329,357	-3,196		520,810	2,650	41,850,167	-546

Source: CTPS, MOVES Model, 2014

When isolated, the project-related transit emissions (from the eight-to-ten DMAs) will contribute an additional 2,610 kg/day of CO₂ under Alternative 1 (the Preferred Alternative). However, when combined with emissions reductions associated with mode shift from previous highway trips, Alternative 1 will

² Motor Vehicle Emission Simulator (MOVES), United States Environmental Protection Agency (EPA). This emission modeling system estimates emissions for mobile sources covering a broad range of pollutants and allows multiple scale analysis.

provide a net CO₂ reduction of 1,573 kg/day when compared to the 2035 No-Build condition. Alternative 3, the On-Street Alternative, will provide the second-greatest benefit, although only 35% of that provided by the Preferred Alternative.

In order to convert these values to tons per year of CO₂ emissions, weekday and weekend factors were developed based upon existing MBTA Silver Line and Chelsea bus ridership. Table 6.2-2 summarizes the weekday and weekend data.

Table 6.2-2: MBTA Silver Line and Chelsea Bus Routes Weekday/Weekend Transit Ridership Comparison

Route	Ridership		
	Weekday	Saturday	Sunday
SL1	6,409	4,079	3,578
SL2	5,218	566	315
SL5	14,709	8,877	6,299
#111 Bus	8,692	6,027	3,747
#112 Bus	1,213	672	379
Total	36,241	20,221	14,318
% of Weekday Ridership		56%	40%
Average Weekend % of Weekday Ridership		48%	

Source: MBTA Ridership and Service Statistics Thirteenth Edition 2010.

It should be noted that the conversion factor will not be used for the transit-only component, since weekend Silver Line Gateway service will not substantially differ from weekday service in terms of running time for buses. The conversion factor will be used to adjust the highway emissions to account for weekday/weekend difference in commuting patterns.

Use of the weekend conversion factor yields the following calculations:

- Alternative 1 Annual Highway CO₂ Emissions

Weekday	260 days x (-4,183) kg/day = -1,087,580 kg
Weekend	105 days x (-4,183) kg/day x 48% = -210,823 kg
Total	-1,298,403 kg/year (-1,298,403,000 grams/year)
Grams/Ton conversion factor	907,185
Tons/Year	-1,431.2 tons/year

- Alternative 1 Annual Transit CO₂ Emissions

Weekday	260 days x 2,610 kg/day = 678,600 kg
Weekend	105 days x 2,610 kg/day = 274,050 kg
Total	952,650 kg/year (952,650,000 grams/year)
Grams/Ton conversion factor	907,185
Tons/Year	1,050.1 tons/year

- Alternative 1 Annual Highway + Transit CO₂ Emissions = -381.1 tons/year

In summary, the Silver Line Gateway service is expected to result in an annual reduction of 381.1 tons of CO₂.

6.3 Other Measures to Reduce Emissions

Additional measures to reduce GHG emissions will continue to be explored by MassDOT. The emissions projections provided in Section 6.2 are based upon the continued use of the existing DMA fleet through its standard overhaul and service period. After that period, the replacement fleet is likely to employ cleaner and more efficient technology with fewer emissions than the existing DMA fleet. It should be noted that extension of the catenary system from the Silver Line tunnel in South Boston to the entire Silver Line Gateway service area, while providing an all-electric option, is not practicable due to bridge clearance, overhead 115KV electric transmission lines and other factors.

The GreenDOT Implementation Plan (MassDOT, 12/12/12), includes a goal to “Improve statewide air quality.” Tasks listed in the plan to accomplish this goal, and the indicators that will be used to measure progress, include the following:

Task: Increase fuel efficiency of operating transit fleet

Indicator: 100% of transit bus fleet replaced or retrofitted with hybrid systems or best in class fuel efficiency vehicles (by year 2020)

Task: Increase efficiency of transportation systems operations

Indicator: Dwell time of commuter rail trains at stations decreased (by year 2015)

Task: Increase efficiency of transportation systems operations

Indicator: ITS (Intelligent Transportation Systems) deployed in critical locations to manage congestion and encourage transit (by year 2015)

As part of the Silver Line Gateway project, transit signal system improvements, transit signal priority and intelligent transportation system (ITS) measures will be implemented to reduce intersection delay and associated emissions.

The provision of the shared-use path will encourage additional non-motorized transportation in Chelsea and will eventually connect to regional facilities. The shared-use path will also provide direct non-motorized access to three of the four BRT stations.

An ADA (Americans with Disabilities Act)-compliant connection between the Washington Avenue bridge and the Downtown Chelsea BRT station will be constructed as part of the project. This connection will provide ease of transfer between the Silver Line Gateway BRT service and the MBTA Bus #111 service.

During construction, contractors will be required to comply with State policies and regulations intended to reduce construction equipment emissions, including emission control device retrofitting, reduced idling, use of ultra-low sulfur diesel (ULSD) fuel or alternative fuels, and other measures.

6.4 MEPA GHG Consultation Meeting

As recommended in the Secretary's Certificate, MassDOT attended a consultation meeting at the MEPA office on March 3, 2014, to discuss the methods and content of the GHG analysis necessary for the Single EIR. The contents of this section reflect the guidance provided at that meeting.

7 Construction Period Impacts

From the Secretary's Certificate on the Expanded ENF:

"The Single EIR should include a draft Construction Management Plan (CMP) describing project activities and their schedule and sequencing, site access and truck routing, and BMPs that will be used to avoid and minimize adverse environmental impacts. The CMP should address potential construction period impacts (including but not limited to land disturbance, noise, vibration, dust, odor, nuisance, vehicle emissions, construction debris, and construction-related traffic) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts. The Single EIR should outline potential measures to address materials management during the construction period. The Single EIR should discuss measures proposed to protect wetland resource areas during construction, and the CMP should include an erosion control component to address protection of water quality and wetland resources. The project must comply with MassDEP's Solid Waste and Air Quality Control regulations during construction. MassDOT should note MassDEP's detailed comments regarding compliance with the Massachusetts Contingency Plan (MCP) and recycling of construction and demolition waste.

In accordance with MassDOT's GreenDOT Policy Directive, contractors will be required to install emission control devices on all off-road vehicles to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD)."

7.1 Construction Management Plan (CMP)

This section describes Construction Management Plan (CMP) elements for the project including:

- Project activities
- Schedule and sequencing
- Site access and truck routing
- Potential construction related impacts
- Management of excavated materials
- BMPs to avoid and minimize adverse environmental impacts
- Compliance with solid waste and air quality control
- Compliance with the MCP and recycling of construction and demolition waste

During construction, contractors will be required to comply with State policies and regulations intended to reduce construction equipment emissions, including emissions control device retrofitting on off-road vehicles over 50 horse power, reduced idling, use of ultra-low sulfur diesel fuel or alternative fuels, and other measures.

MassDOT proposes to construct the Silver Line Gateway BRT within the former Grand Junction Railroad right-of-way under two separate phases. The Phase I work, which will be performed as a MassDOT Highway Division contract, will consist of installing an approximately 30-foot wide paved roadway, a shared-use path alongside the busway, retaining walls, three of the four BRT Stations, replacement of the Washington Avenue bridge, and a stormwater management system which will include subsurface piping and a biofilter swale.

The Phase II work will be performed under a separate MassDOT Rail & Transit Division (MBTA) Construction Contract, and include relocation of the Commuter Rail Station and decommissioning of the

existing commuter rail station, construction of the Downtown Chelsea BRT station and access connections with Washington Avenue. The relocated station will be designed and constructed in accordance with the latest Americans with Disabilities (ADA) regulations.

7.1.1 Anticipated Construction Sequencing

The following list includes the key construction activities and operation procedures for the proposed Phase I portion of the Project in the approximate order of their implementation.

1. Construction mobilization;
2. Delineate and stakeout the limits of work;
3. Install temporary erosion and sedimentation controls;
4. Stage construction equipment; prepare and clear site; construct temporary access roads;
5. Excavate soils, establish material stockpile areas and perform soil testing;
6. Transport off-site and properly dispose of excavated materials;
7. Perform utility relocations;
8. Construct substructures for bridge replacement and retaining walls;
9. Construct stormwater management system;
10. Construct the Busway and shared-use path;
11. Construct bridge superstructure;
12. Construct traffic signals, railroad grade crossing upgrades;
13. Construct the Eastern Avenue, Box District, and Mystic Mall BRT Stations;
14. Restore upland areas, including planting vegetation, where appropriate;
15. Remove temporary construction staging areas; and
16. Demobilize construction.

The Phase II work, consisting of relocating the existing Chelsea Center Commuter Rail Station and constructing the Downtown Chelsea BRT Station, will be performed under a separate Construction Contract to be administered by the MassDOT Rail & Transit Division. The work will be performed within the existing railroad right-of-way. The key construction activities and operation sequence for the proposed Phase II portion of the Project will include:

- a. Mobilize construction;
- b. Install temporary erosion and sedimentation controls;
- c. Identify site access and stage construction equipment;
- d. Relocate existing utilities and install conduit for new station utilities;
- e. Construct new Downtown Chelsea BRT Station;
- f. Install lighting, power, signal and communications system elements;
- g. Install signing and other station finishes;
- h. Open the relocated station for operation;
- i. Demolish the existing station. Dispose of all demolition debris per federal & state regulations;
- j. Complete new access walkway from Washington Avenue to the new BRT Station;
- k. Complete the Chelsea Center BRT Station finishes; and
- l. Design and install busway traffic signal systems.

7.1.2 Access, Staging and Site Preparation

Several temporary construction entrances will be installed to provide vehicle and equipment access to the project site. It is anticipated that the Contractor will access the site at both Cottage Street and at Griffin

Way. Temporary gravel construction entrances will likely be constructed to minimize sediment being tracked onto the local roadways. Prior to beginning construction, the Contractor will install silt fence along the perimeter of the site where the elevation of the site is higher than the adjacent property. Silt sacks will be installed in the existing catch basins down gradient from the work area.

7.2 Potential Construction Period Impacts

Temporary short-term construction period impacts will be minimal and mitigated to the extent practicable. Appropriate construction mitigation measures will be incorporated into the final contract documents (plans & specifications). The potential construction impacts and proposed mitigation measures are summarized in Table 7.2-1 below:

Table 7.2-1: Potential Construction Impacts and Proposed Mitigation Measures

Potential Impact	Mitigation Measure
Land Disturbance	<ul style="list-style-type: none">▪ Avoid and minimize tree clearing along the project corridor.
Noise	<ul style="list-style-type: none">▪ Maintain mufflers on construction equipment.▪ Limit nighttime construction.▪ Keep truck idling to a minimum (per MassDEP anti-idling regulations).
Vibration	<ul style="list-style-type: none">▪ Piles for structures will be installed using augered holes in lieu of pile drivers.
Dust and Odor	<ul style="list-style-type: none">▪ Water and calcium chloride will be applied on a periodic basis per MassDOT standard specifications to control dust and odors.
Nuisance	<ul style="list-style-type: none">▪ Normal work hours will be from 7 am to 4 pm. Night and weekend work will be limited.
Vehicle Emissions	<ul style="list-style-type: none">▪ Keep truck idling to a minimum (per MassDEP anti-idling regulations).▪ Meet the MassDOT Highway Division Standard Specifications for diesel Construction Equipment (Section 7.02).
Construction Debris	<ul style="list-style-type: none">▪ Meet the MassDOT Highway Division Standard Specifications, requiring discarded material, rubbish or debris to be removed from the work site and disposed.
Construction-related Traffic	<ul style="list-style-type: none">▪ Multiple access points to the project site will be provided.▪ Most of the project elements lie within a railroad right-of-way, apart from local traffic.

7.3 Measures to Address Materials Management

The project will include excavation of materials for construction of the project elements. Material management practices for the project will handle soil and fill excavated during construction in accordance with the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, and all other applicable state, federal and local regulations. Due to space constraints it is anticipated that the excavated excess soils will be transported directly to an appropriate offsite receiving facility. To the extent practical, the Contractor will reuse geotechnically suitable excavated material prior to using imported backfill to reduce the volume of material to be disposed.

In the event that soil needs to be stockpiled, the contract specifications will require the contractor to develop an excavation and stockpiling protocol which will include the identification of locations for temporary soil stockpiles; disposal and recycling facilities; licensed hauler(s); and equipment and handling methods to be used in excavation, segregation, transport, disposal or recycling.

Stockpiling of soil will be managed under the oversight of a Licensed Site Professional (LSP) according to an approved excavation and stockpiling protocol and in accordance with all MassDEP statutes, policies, and regulations.

7.4 Measures to Protect Wetland Resources

The construction of the busway will require the filling of approximately 13,798 square feet of isolated vegetated wetlands (IVW). As discussed in Section 3.3, Wetlands W1 and W2 do not possess any principal functions and are not considered an important physical component of a larger wetland ecosystem.

In the area of the two isolated vegetated wetlands the elevation of the proposed roadway will be up to two feet higher than the existing ground elevation. Any existing topsoil and organic material will be removed and gravel will be placed to provide a suitable base for the pavement. Any material which is to be stockpiled on site will be surrounded by silt fence and compost filter tubes to contain and minimize sediment flow during rain events.

7.5 Measures to Control Erosion

CMP should include an erosion control component to address protection of water quality and wetland resources.

An erosion and sedimentation control program will be implemented to minimize construction related impacts. The program incorporates Best Management Practices (BMPs) specified in guidelines developed by the DEP and presented in the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials* (DEP, 1997) and U.S. Environmental Protection Agency (EPA) document, *Interim Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites* (Office of Water Report EPA 833-R-060-04, 2007).

Proper implementation of the erosion and sedimentation control program will:

1. Minimize exposed soil areas through sequencing and temporary stabilization;
2. Place structures to manage stormwater runoff and erosion; and
3. Establish a permanent vegetative cover for other forms of stabilization as soon as practicable.

Non-Structural Practices

Non-structural practices to be used during construction include temporary stabilization, temporary seeding, permanent seeding, pavement sweeping, and dust control. These practices will be initiated as practicable in appropriate areas at the site.

Temporary Stabilization

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be covered with a layer of straw mulch.

Permanent Seeding and Landscaping

Upon completion of final grading, any areas not covered by pavement will be seeded with a native upland seed mix and planted with native shrubs as depicted on the plans located in Appendix B.

Pavement Sweeping

Project roads shall be swept as needed during construction. The sweeping program will remove sediment and other contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater (per *Demonstration of Nonpoint Pollution Abatement through Improved Street Cleaning Practices*, U.S. EPA, 1979). A street sweeper shall be kept at the site or at a nearby location to facilitate this practice. Once construction has been completed, sweeping at the project site will occur as required under the Operation and Maintenance Plan.

Structural Practices

Structural erosion and sedimentation controls to be used on the site include barriers and catch basin inlet protection.

Erosion Control Barriers

Prior to any ground disturbance, an erosion control barrier will be installed at the downgradient limit of work. As construction progresses, additional barriers will be installed around the base of stockpiles and other erosion prone areas. The barriers will be entrenched into the substrate to prevent underflow.

If sediment has accumulated to depth which impairs proper functioning of the barrier, it will be removed by hand or by machinery operating upslope of the barriers. This material will be either reused at the site or disposed of at a suitable offsite location. Any damaged sections of silt fence or hay bales will be repaired or replaced immediately upon discovery.

Catch Basin Inlet Protection

The inlets of existing and proposed catch basins will be protected from sediment inflow during the work period by surrounding them with a barrier of staked hay bales or by installing Silt Sacks®. If hay bales are used, a layer of non-woven filter fabric shall be placed beneath the grate of each basin. If sediment that has collected behind the barrier or in the Silt Sack® to a point where it impairs proper functioning, it will be removed and will be either reused onsite or disposed of at a suitable offsite location.

7.6 Solid Waste and Air Quality Control Regulations

The project will comply with MassDEP's Solid Waste and Air Quality Control regulations during construction.

The primary demolition activity associated with the project is at the Washington Avenue Bridge. As part of MassDOT's GreenDOT Implementation Plan, waste management plans are required to be developed for all construction projects. In addition, the GreenDOT Implementation Plan includes targets of 65% of construction debris reuse or recycling by 2015 and 80% by 2020. MassDOT will evaluate methods to incorporate construction and demolition recycling activities as a sustainable measure for the project. The construction contract will require a certification that any lead coated steel removed from the project was not reused or buried, but was sent to a scrap metal recycling facility.

Demolition activities will comply with both Solid Waste and Air Pollution Control regulations. As the project progresses and demolition quantities are finalized, MassDOT will determine whether potential on-site crushing activities and associated equipment use will require the preparation and submittal of a plan application to MassDEP.

The need for asbestos removal is not expected. The water line crossing on the Washington Avenue Bridge is uninsulated and therefore unlikely to contain asbestos. Other than the bridge demolition, minor demolition activities during later phases of the Silver Line Gateway project at the existing commuter rail station are limited to removal of the station canopy and portions of the concrete platform, neither of which contain asbestos. There are no buildings or building demolition associated with the project. In the event that asbestos materials are discovered as part of conduit removal or replacement, MassDOT will comply with MassDEP regulations as applicable.

7.7 Compliance with MCP and Recycling of Construction and Demolition Waste

7.7.1 Environmental Pre-Characterization Assessment

Subsequent to the completion of the Initial Site Assessment (ISA) summarized in the Expanded ENF (and included in full in the Expanded ENF Technical Appendices), an environmental soil pre-characterization assessment was conducted to confirm the presence or absence of hazardous materials within the project area. The project area has a long history of use as a railroad bed in addition to potential environmental impacts from the two great Chelsea fires as referenced in the Phase I ISA report, both possible sources of environmental impacts.

The pre-characterization assessment activities were completed between November 2013 and March 2014 and involved collecting soil samples from 20 pre-determined boring locations for chemical analysis. The sampling rationale was based on the findings of the Phase I Study ISA and was based on the soil impacts reported on abutting or nearby properties and MassDOT input.

Soil types observed in the 0 to 5-foot depth interval were „fill“ consisting of brown to black sand and gravel, with some brick fragments and buried tree limbs. In some locations, the ground surface was covered with either asphalt pavement or ballast stone (i.e., 1 – 2 inch crushed stone pieces).

Elevated levels of polyaromatic hydrocarbons (PAH) and metals were found, primarily within surficial soils.

Following receipt of the soil sample laboratory reports, results were compared to the applicable reportable concentration criteria referenced in the *Massachusetts Contingency Plan, 310 CMR 40.0000* (MCP). The

sample results indicate that of the 20 borings sampled, soil samples from nine borings yielded concentrations of polycyclic aromatic hydrocarbons (PAHs) and metals above applicable MCP reportable concentrations, possibly triggering a reportable condition (i.e., concentrations in soil exceed reportable concentration) under the MCP. Subsequent laboratory testing was completed on soil samples from areas with samples above reportable conditions, by means of polarized light microscopy (PLM) and determined that coal and ash are present in the soil. An exemption to MCP reporting applied due to the presence of coal and ash. In addition, further soil sampling for analyses of certain metals is being conducted to determine if other MCP exemptions apply or if reporting is required.

Groundwater sampling was not conducted in the project area, and except for possible dewatering activities in one area, groundwater is not expected to be encountered. There are plans to evaluate the quality of groundwater in the area of the dewatering to assist with the planning of the management of the water. In addition, the Phase I Initial Site Assessment Report (provided in full as an Appendix to the Expanded ENF) did not identify any VOC sites in close proximity to buildings within the project area. Therefore, there are no vapor intrusion pathways for VOCs.

7.7.2 Management of Soil and Proposed Next Steps

The project contract will require the development of a site-specific health and safety plan (HASP) which includes the components required by OSHA 29 CFR 1910.120(b) and is stamped by a Certified Industrial Hygienist certifying that it complies with all applicable laws, regulations, standards and guidelines, and that it provides a degree of protection and training appropriate for implementation on the project. The HASP shall be designed to identify, evaluate, and control health and safety hazards associated with the work on this project and provide for emergency response if needed. For all construction activities which require handling or exposure to potentially hazardous materials, the Health and Safety Plan shall specify an on-site Safety Officer. The Site Health and Safety Officer duties shall include, but are not limited to: implementation of the site Health and Safety Plan, training, evaluating risks, safety oversight, determining levels of personnel protection required, and performing any required monitoring at the site.

The project contract will also require the Contractor to provide the services of a Licensed Site Professional (LSP) to provide the services necessary to comply with the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. These services will include, but are not limited to, sampling and analysis of potentially contaminated media, preparation of IRA, URAM or RAM Plans, status reports, transmittal forms, release notification forms, completion statements and related documents required pursuant to the MCP. The LSP will be responsible for obtaining all permits related to the characterization, treatment, and disposal of contaminated media. The LSP will also provide oversight of handling, stockpiling, re-use, treatment and disposal of contaminated media, including preparation of Bills of Lading, Manifests, and related shipping documents.

Handling and management of impacted soils during the construction process will be completed pursuant to a Soils Management Plan, which will stipulate processes for grading, excavation, monitoring (including dust), stockpiling, possible direct dig and haul, testing, and off-site transport and disposal/recycling, as necessary. Dust suppression will be implemented along the entire project area. In addition, real-time air monitoring will be conducted during excavation and handling of soil identified in one area as having elevated concentrations of chromium. Additional analytical results are pending to determine if real-time air monitoring will be needed in any other project area locations. In addition, if there are confirmed reportable concentrations and required reporting per the MCP, soil impacts within the MCP disposal site(s) portion(s) of the project area will be addressed pursuant to the MCP in appropriate submittals to facilitate the construction, depending upon timing of work, future delineation of nature and extent, soil quantities, etc. These submittals may include Release Abatement Measure(s), phase reports (e.g., Phase I) and/or closure document(s) (Response Action Outcome Statement or Permanent Solution).

7.8 GreenDOT Policy

During construction, contractors will be required to comply with State policies and regulations intended to reduce construction equipment emissions, including emissions control device retrofitting, reduced idling, use of ultra-low sulfur diesel fuel or alternative fuels, and other measures. In addition, Table 7.8-1 summarizes GreenDOT policy themes, goals, tasks and indicators, which were considered and incorporated into the project where relevant and feasible.

Table 7.8-1: GreenDOT Policies incorporated into the Silver Line Gateway Project

Theme			
Air	Increase statewide air quality	Increase efficiency of transportation systems operations	Bus route efficiency measures implemented by all transit operators
			ITS deployed in critical locations to manage congestion and encourage transit
Planning, Policy + Design	Design a multi-modal transportation system	Increase total miles + connectivity of bicycle + pedestrian facilities	Contemporary bicycle facilities such as cycle tracks, painted lanes, and bike signals considered in Complete Street designs
			Inventory of traffic signals + grade crossing signal conducted
		Improve traffic controls to reduce vehicle emissions, + to support walking + biking	All signalized corridors evaluated for optimal operations for all users, including bike-specific signs, signals and detectors
			Payment + boarding system performance statewide
		Improve transit system performance statewide	Transit signal Priority for all new traffic signals implemented
			At least one new Bus Rapid Transit line meeting ITDP's BRT standards operational within a major city
Water	Triple mode share of bicycling, transit + walking	Connect land use planning with transportation planning + investments	Land use + transportation planning strategies to support mode shift incorporated into 2016 Regional Transportation Plans
			Environmentally sensitive site design in new construction projects utilized
			Post peak discharge rates held to less than pre-project discharge rates to the maximum extent possible
			All projects designed to remove solids + pollutants to the maximum extent possible
			All projects designed to include measures to increase infiltration + reduce stormwater volumes
Water	Improve ecological function of water systems	Reduce stormwater volumes + increase permeable surface areas	Environmentally sensitive site design in new construction projects utilized
			Post peak discharge rates held to less than pre-project discharge rates to the maximum extent possible
			All projects designed to remove solids + pollutants to the maximum extent possible
			All projects designed to include measures to increase infiltration + reduce stormwater volumes

8 Mitigation and Section 61 Findings

From the Secretary's Certificate on the Expanded ENF:

"The Single EIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed draft Section 61 Findings for all State Agency Permits. The Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation, based on the construction phases of the project, estimate the individual cost of each proposed measure, and identify parties responsible for funding and implementing the mitigation measures. The proposed Section 61 Findings will serve as the primary template for permit conditions."

8.1 Cultural Resources

MassDOT submitted a project notification form (PNF) for the Silver Line Gateway/Washington Avenue Bridge Replacement project to the State Historic Preservation Officer (SHPO) at the Massachusetts Historical Commission (MHC) on December 12, 2013. MassDOT also submitted PNFs to the Tribal Historic Preservation Officers (THPOs) of the Wampanoag Tribe of Aquinnah and the Mashpee Wampanoag Tribe on December 24, 2013. MassDOT submitted the PNFs in compliance with the Army Corps of Engineers' permit requirements pertaining to Section 106 of the National Historic Preservation Act of 1966, as amended.

The PNF provided a detailed description of the project's scope of work and identified properties in the project area that are listed or eligible for listing in the National Register of Historic Places. The PNF stated that the project area is adjacent to the National Register-listed Bellingham Square Historic District. The northerly boundary of the historic district between Washington Avenue and Broadway is defined by the MBTA railroad right-of-way. The new Silver Line Gateway Extension roadway and the new shared-use path in this vicinity will be constructed entirely within the MBTA right-of-way and outside the boundaries of the NR-listed Bellingham Square Historic District. Otherwise no other National Register-listed or –eligible properties were identified within or adjacent to the project area.

The PNF also discussed MassDOT's assessment of archaeological potential in the project area. A review of the MHC archaeological base maps revealed no recorded pre-contact or historic sites in the vicinity of the project area in Chelsea. Project impacts will be confined to the abandoned Grand Junction railroad bed, heavily graded track-side areas with steep side sloped within the active MBTA railroad right-of-way, paved areas at the Mystic Mall, and the Washington Avenue Bridge with no widening at the approaches. MassDOT's Archaeological Resources Supervisor and other MassDOT Cultural Resources Unit (CRU) staff walked the entire ½ mile length of the Grand Junction right-of-way on September 24, 2013, and also viewed as much of the active MBTA right-of-way as feasible from overpasses and intersecting streets. CRU staff has determined that the entire project area has been heavily disturbed by the effects of past railroad, roadway, and bridge construction and high-density residential and commercial development and, thus, little or no archaeological potential may be ascribed to the project area. No visible remains or features of possible historical significance were encountered during the site visit.

The SHPO or neither of the THPOs responded to MassDOT's PNF. The Section 106 process for this project is complete.

8.2 Proposed Mitigation Measures

The Silver Line Gateway project and its various components have minimal impacts to natural and man-made resources. The following pages summarize project-related impacts and mitigation measures that address those impacts.

Impact: Permanent alteration of 13,798 square feet of isolated vegetated wetlands

Mitigation: Replacement in-place of existing Sediment/ Toxicant Retention, Nutrient Removal, and Wildlife Habitat functions. As a result of this determination and discussions with USACOE and DEP during a site visit on January 17, 2014, wetland replication will not be required. Instead, the existing water quality and habitat functions will be provided as part of the proposed stormwater management system design described below.

Mitigation will include the construction of stormwater Best Management Practices (BMP's) to manage stormwater from the proposed busway, and to also mitigate the lost functions Wetlands W1 and W2 are capable of. The installation of the BMP's will improve water quality within the watershed by providing treatment and attenuation of stormwater runoff before discharging to the existing stormwater management system which eventually discharges to the Chelsea Miles River (See Sheets 6 and 7 of the Project Plan located in Appendix B). A network / series of stormwater management swales will be planted with the species identified in Table 3.3-1 to improve aesthetic values and increase the potential for utilization by urban songbirds, while providing a food source in the form of hard/soft mast and fruits associated with native herbaceous, shrub, and tree species. No offsite wetland mitigation or replication is proposed.

Impact: Traffic safety and operations issues associated with BRT crossing at Everett Avenue

Mitigation: Placement of traffic signal at Market Basket / Mystic Mall northerly driveway

Two new signals will be evaluated and implemented on Everett Avenue - one at the BRT busway and one at the northern Market Basket driveway. Both signals are expected to be equipped with Transit Signal Priority (TSP) technology, allowing them to detect when a BRT vehicle is approaching and update the signal timing plans to give BRT vehicles green when possible. TSP also allows these signals to be coordinated with the commuter rail and railroad warning crossing devices so that when a train is in proximity of the intersection, buses may pass through parallel to the tracks, but not vehicles, pedestrians, or bicyclists on Everett Avenue. When the busway has a red light, pedestrian crossing protection is provided on both sides of Everett Avenue over the busway and rail tracks. Both signals coordinate to control the flow of traffic in and out of the Market Basket site, giving Everett Avenue green all the time except when a bus or train is approaching. When the busway signal is red for Everett Avenue, vehicles traveling on Everett Avenue north would be able to make a left into Market Basket, and vehicles traveling out of Market Basket would be able to make a right on Everett Avenue southbound.

Impact: Traffic safety and operations issues associated with BRT crossing at Spruce Street

Mitigation: New Spruce Street access location for Massachusetts Information Technology Center (MITC) and reconfiguration of existing MITC access on Spruce Street

The busway crosses Spruce Street just south of the commuter rail tracks and just north of the Massachusetts Information Technology Center (MITC) driveway as shown in Figure 2.2-12. Construction of the busway necessitates removal of a small section of sidewalk on the east side of Spruce Street as well as the relocation of the southern railway crossing arm and parking lot dumpster storage. The MITC parking lot entrance is relocated due to close proximity of the busway. A new traffic signal, equipped with TSP, will be analyzed and implemented, and would rest on green for Spruce Street, only turning red when a bus or train is approaching. The signal gives pedestrian protection when no train or BRT vehicle is approaching. MITC parking spaces impacted by the busway and the driveway relocation are replaced by

reconfiguring the layout of the parking spaces and circulation aisles resulting in little or no net loss of parking.

Impact: Loss of property / loss of parking spaces

Mitigation: Property taking settlement with MassDOT

In order to accommodate the Silver Line Gateway project, right-of-way takings are required. For a list of the property takings, refer to Appendix F - Preliminary Right-of-Way Plans.

The following table lists those property takings with potential impacts to existing parking spaces:

Table 8.2-1: Proposed Property Takings with Parking Impacts

Property Owner	Location	Area of Taking	Parking spaces Lost
Demoulas Super Market (Market Basket)	170 Everett Avenue	0.45 acres	10 ±
Harbor Executive Park (MGH Chelsea)	151 Everett Avenue	0.28 acres	8 ±
Comm. of Massachusetts (MITC)	200 Arlington Street	0.20 acres	6 ±
J & N Realty Trust	25 Sixth Street	0.05 acres	5 ±
Massachusetts Water Resources Authority (MWRA)	2 Griffin Way	0.00 acres	22 ±
Eastern Avenue Holdings	50 Eastern Avenue	0.04 acres	6 ±

The parking impacts for Massachusetts Water Resources Authority (MWRA) and Eastern Avenue Holdings are the result of the discontinuation of formal or undesignated use of property for parking within the existing MassDOT owned right-of-way.

Secondary impacts associated with the project, including right-of-way actions, are minimal. The loss of parking spaces at the Mystic Mall / Market Basket location to provide for the busway turnaround area may be replaced at another on-site location through new construction or restriping. Increased and improved transit service via the Silver Line Gateway project is expected to replace vehicle trips (and associated parking needs) with transit trips. Similar right-of-way actions and loss of parking at the MGH facility on Spruce Street may create the need for MGH to reconfigure their parking lot and/or seek off-site replacement parking. Other secondary impacts related to right-of-way actions are less definitive, involving the loss of parking and storage by adjacent property owners formally or informally utilizing property within the existing MassDOT layout.

8.3 Summary of Mitigation Measures

Mitigation measures will be implemented during Phase I portion of the project. The measures, including associated costs, are listed in Table 8.3-1.

Table 8.3-1: Summary of Mitigation Measures

Proposed Mitigation Measure	Implementation Schedule	Cost Estimate*	Responsible Party
Wetlands	2015-16	\$450,000	MassDOT
Everett Avenue Driveway signalization	2015-16	\$150,000	MassDOT
Spruce Street Driveway relocation	2015-16	\$150,000	MassDOT
Right-of-Way	2014-15 Prior to construction	TBD**	MassDOT
Parking – Market Basket	2015-16	\$75,000	MassDOT & Market Basket
Parking - MGH	2015	\$50,000	MassDOT & MGH Chelsea
Parking - MITC	2015	\$100,000	MassDOT & DCAM
Parking – Arlington/6th	2015	\$10,000	MassDOT & J&N Realty
Parking – Eastern Ave.	2015	\$10,000	MassDOT & Eastern Avenue Holdings

*Based on 25% Design. Mitigation costs for parking include costs for lot reconfiguration.

**To be determined by MassDOT Right-of-Way Bureau

8.4 Proposed Section 61 Finding

Department of Environmental Protection Proposed Section 61 Finding

Project Name: Silver Line Gateway
Project Location: Chelsea and Boston, Massachusetts
Project Proponent: Massachusetts Department of Transportation (MassDOT) - Highway Division
EEA File No.: 15124
Date Noticed in Monitor: April 9, 2014

The potential environmental impacts of the project to resources protected under the jurisdiction of the Massachusetts Department of Environmental Protection have been characterized and quantified in the 2013 Expanded ENF and 2014 Single EIR, which are incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, MassDOT has worked to develop measures to mitigate impacts of the project. Following implementation of the mitigation proposed in the referenced Expanded ENF and Single EIR, the Massachusetts Department of Transportation Highway Division finds that all feasible means and measures have been adopted to minimize and mitigate impacts on the environment.

MassDOT recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the project, is central to its responsibilities under the Massachusetts Environmental Policy Act (MEPA). MassDOT has accordingly prepared the following Table 8.4-1– Massachusetts Department of Environmental Protection Proposed Section 61 Finding – Summary of Mitigation Commitments that summarizes, for each potential impact category, the mitigation that MassDOT will provide, and proposed schedule and cost. These mitigation commitments are described in detail in the Expanded ENF and Single EIR.

Now, therefore, the Massachusetts Department of Transportation Highway Division, having reviewed the MEPA filings for the Silver Line Gateway project, including the mitigation measures enumerated in Chapter 8 of the Single EIR, further itemized on the annexed Table of Mitigation Measures, finds pursuant to Massachusetts General Law Chapter 30, Section 61 that the implementation of the aforesaid measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the project to the environment.

Massachusetts Department of Transportation Highway Division

By (Name/Title)

Date

Table 8.4-1: Massachusetts Department of Environmental Protection Proposed Section 61 Finding – Summary of Mitigation Commitments

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
Wetlands	MassDOT	<ul style="list-style-type: none"> • Provide mitigation that includes the construction of a network / series of biofilter stormwater management swales alongside the BRT within the former GJRR right-of-way. The proposed stormwater BMP's will create a replication area measuring approximately 14,125 sf in size, thereby providing a replication to disturbance ratio of slightly greater than 1:1. The swales will be vegetated to improve aesthetic values and increase the potential for utilization by urban songbirds, while providing a food source in the form of hard/soft mast and fruits associated with native herbaceous, shrub, and tree species. • Provide mitigation that restores pre-remediation hydrologic conditions by directing stormwater runoff towards the biofilter stormwater management swales. Redirection of surface flows and subsequent groundwater discharge will provide suitable root zone saturation and inundation to successfully restore palustrine wetland hydrological conditions within the biofilter swales • Provide mitigation that replaces existing soils with soil materials that meet as closely as practicable the specific textures and contents of typical palustrine wetland soils. • Provide mitigation that includes plantings to stabilize soils and restore vegetative communities, and provide a mix of plants and species of high value to wildlife, and exclude invasive and other unacceptable plant species 	<ul style="list-style-type: none"> • Wetland mitigation areas will be constructed during Phase 1 as early in the construction period as practicable • Cost included in the overall project cost
Stormwater Management	MassDOT	<ul style="list-style-type: none"> • Meet goal for project stormwater system by meeting where practicable the requirements of DEP's Stormwater Standards through implementation of structural and non-structural stormwater BMPs. In lieu of a closed system, where possible sheet flow will be directed to biofilter swales that will provide bioretention functions. The swales are consistent with the following LID measures: use of country drainage; water quality swale, and grass channels. The station platform canopy design intent is to collect runoff from the canopies and route it to planting areas, tree boxes or rain gardens which will be considered at each station. These LID techniques will provide temporary detention, filtering and evapotranspiration. 	<ul style="list-style-type: none"> • To be built throughout the construction period • Cost included in overall project cost

Table 8.4-1: Massachusetts Department of Environmental Protection Proposed Section 61 Finding – Summary of Mitigation Commitments (cont'd)

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
Construction Period			
Noise	MassDOT	<ul style="list-style-type: none"> All construction equipment will comply with any appropriate MassDOT noise standards. MassDOT will require the following noise mitigation provisions be adhered to by the construction contractor: <ul style="list-style-type: none"> - All construction equipment powered by an internal combustion engine will be equipped with a properly maintained muffler - Air-powered equipment will be fitted with pneumatic exhaust silencers 	<ul style="list-style-type: none"> To be built throughout the construction period Cost included in overall project cost
Air Quality	MassDOT	<ul style="list-style-type: none"> Mitigate construction-related dust through “good housekeeping” practices in accordance with DEP regulation 310 CMR 7.09) Implement a construction equipment retrofit program and retrofit equipment with emissions control technologies in accordance with the Administrative Consent Order (ACO-BO-00-7001) entered into by DEP and EOT Require construction contractors to adhere to “clean diesel” practices for construction equipment Adhere to the strategies for the construction phase suggested by MEPA’s GHG Policy and Protocol 	<ul style="list-style-type: none"> To be built throughout the construction period Cost included in overall project cost
MCP	MassDOT	<ul style="list-style-type: none"> Dust suppression will be implemented along the entire project area. In addition, real-time air monitoring will be conducted during excavation and handling of soil identified in one area as having elevated concentrations of chromium. Additional analytical results are pending to determine if real-time air monitoring will be needed in any other project area locations. 	<ul style="list-style-type: none"> To be built throughout the construction period Cost included in overall project cost
Stormwater	MassDOT	<ul style="list-style-type: none"> Prepare and adhere to the Stormwater Pollution Prevention Plan 	

Massachusetts Water Resources Authority

Proposed Section 61 Finding

Project Name: Silver Line Gateway

Project Location: Chelsea and Boston, Massachusetts

Project Proponent: Massachusetts Department of Transportation (MassDOT) - Highway Division

EEA File No.: 15124

Date Noticed in Monitor: April 9, 2014

The potential environmental impacts of the project to resources and infrastructure protected under the jurisdiction of the Massachusetts Water Resources Authority (MWRA) have been characterized and quantified in the 2014 Single EIR, which are incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, MassDOT has worked to develop measures to mitigate impacts of the project. Following implementation of the mitigation proposed in the referenced Single EIR, the Massachusetts Department of Transportation Highway Division finds that all feasible means and measures have been adopted to minimize and mitigate impacts on the environment.

MassDOT has identified MWRA water and wastewater infrastructure in the vicinity of the Silver Line Gateway project. The MWRA has expressed particular concern regarding sections 57, 8, 46 and 38 and has provided plans for those sections of its system. The Silver Line Gateway construction will only overlap with the MWRA system in the vicinity of the commuter rail and busway crossing near the intersection of Everett Avenue with Vale Street and Maple Street (MWRA section 57), where construction will occur over an MBTA water line. Project-related construction will occur over an MWRA water line at this location. The Silver Line Gateway project will not be tying into the MWRA water line.

The proposed construction will require the filing of an 8(m) Permit with the MWRA. MassDOT will file an application with the MWRA, along with all required supporting documentation, and coordinate with the MWRA.

MassDOT recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the project, is central to its responsibilities under the Massachusetts Environmental Policy Act (MEPA). MassDOT has accordingly prepared the following Table 8.4-2 – Massachusetts Water Resources Authority Proposed Section 61 Finding – Summary of Mitigation Commitments that summarizes, for each potential impact category, the mitigation that MassDOT will provide, and proposed schedule and cost. These mitigation commitments are described in detail in the Single EIR.

Now, therefore, the Massachusetts Department of Transportation Highway Division, having reviewed the MEPA filings for the Silver Line Gateway project, including the mitigation measures enumerated in Chapter 8 of the Single EIR, further itemized on the annexed Table of Mitigation Measures, finds pursuant to Massachusetts General Law Chapter 30, Section 61 that the implementation of the aforesaid measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the project to the environment.

Massachusetts Department of Transportation Highway Division

By (Name/Title)

Date

Table 8.4-2: Massachusetts Water Resources Authority Proposed Section 61 Finding – Summary of Mitigation Commitments

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
MWRA 8 (m) permit	MassDOT	Adhere to conditions in the 8 (m) Permit	<ul style="list-style-type: none">• To be implemented throughout the construction phase, as required• Cost included in overall project cost

Massachusetts Department of Transportation Proposed Section 61 Finding

Project Name: Silver Line Gateway
Project Location: Chelsea and Boston, Massachusetts
Project Proponent: Massachusetts Department of Transportation (MassDOT) - Highway Division
EEA File No.: 15124
Date Noticed in Monitor: April 9, 2014

The potential environmental impacts of the project have been characterized and quantified in the 2013 Expanded ENF and 2014 Single EIR, which are incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, MassDOT has worked to develop measures to mitigate impacts of the project. Following implementation of the mitigation proposed in the referenced Expanded ENF and Single EIR, the Massachusetts Department of Transportation Highway Division finds that all feasible means and measures have been adopted to minimize and mitigate impacts on the environment.

MassDOT recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the project, is central to its responsibilities under the Massachusetts Environmental Policy Act (MEPA). MassDOT has accordingly prepared the following Table 8.4-3 – Massachusetts Department of Transportation Proposed Section 61 Finding – Summary of Mitigation Commitments that summarizes, for each potential impact category, the mitigation that MassDOT will provide, and proposed schedule and cost. These mitigation commitments are described in detail in the Expanded ENF and Single EIR.

Now, therefore, the Massachusetts Department of Transportation Highway Division, having reviewed the MEPA filings for the Silver Line Gateway project, including the mitigation measures enumerated in Chapter 8 of the SEIR, further itemized on the annexed Table of Mitigation Measures, finds pursuant to Massachusetts General Law Chapter 30, Section 61 that the implementation of the aforesaid measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the project to the environment.

Massachusetts Department of Transportation Highway Division

By (Name/Title)

Date

Table 8.4-3: Massachusetts Department of Transportation Proposed Section 61 Finding – Summary of Mitigation Commitments

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
Traffic	MassDOT	<ul style="list-style-type: none"> • Mitigate traffic through a Traffic Detour Evaluation for the construction phase of the Washington Avenue Bridge replacement. The evaluation identifies alternate routes for vehicle traffic during construction, and the potential impacts of the alternate routing. Special consideration will be given to maintenance of pedestrian traffic, access for emergency vehicles from the nearby Chelsea Fire Station and impacts to MBTA bus service. - Install advance warning signage including portable variable message sign (VMS) boards approaching the project and within the project area informing motorists of the construction and detours; - Incorporate signal timing modifications at the intersections of Everett Avenue/Spruce Street and Broadway/Cary Avenue for the temporary construction period. The change at the Everett/Spruce intersection would also include modified lane configurations on one approach. These intersections should be monitored at the outset of the bridge closure in order to facilitate any fine tuning; - Bus Route #111 be rerouted with the inbound turning onto Crescent Street and the outbound route remaining on Broadway right onto Crescent Street and then left onto Cary Avenue. Temporary bus stops with signage would be needed; - Modify City Hall Avenue for the bridge closure period to allow the north side of the street to be used by emergency apparatus traveling eastbound to Broadway. A temporary concrete barrier, flexible delineators and signage will be required. Also, a pedestrian crossing including a small break in the barrier will need to be maintained to the Senior Center that is located behind the fire station. 	<ul style="list-style-type: none"> • To be implemented throughout the construction phase, as required • Cost included in overall project cost

Table 8.4-3: Massachusetts Department of Transportation Proposed Section 61 Finding – Summary of Mitigation Commitments (Cont'd)

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
Traffic Safety		<ul style="list-style-type: none"> New signals will be analyzed and implemented on Everett Avenue - one at the BRT busway and one at the northern Market Basket driveway. Both signals are expected to be equipped with Transit Signal Priority (TSP) technology, allowing them to detect when a BRT vehicle is approaching and update the signal timing plans to give BRT vehicles green when possible. TSP also allows these signals to be coordinated with the commuter rail and railroad warning crossing devices so that when a train is in proximity of the intersection, buses may pass through parallel to the tracks, but not vehicles, pedestrians, or bicyclists on Everett Avenue. When the busway has a red light, pedestrian crossing protection is provided on both sides of Everett Avenue over the busway and rail tracks. Both signals coordinate to control the flow of traffic in and out of the Market Basket site, giving Everett Avenue green all the time except when a bus or train is approaching. When the busway signal is red for Everett Avenue, vehicles traveling on Everett Avenue north would be able to make a left into Market Basket, and vehicles traveling out of Market Basket would be able to make a right on Everett Avenue southbound. The busway crosses Spruce Street just south of the commuter rail tracks and just north of the Massachusetts Information Technology Center (MITC) driveway. Construction of the busway necessitates removal of a small section of sidewalk on the east side of Spruce Street as well as the relocation of the southern railway crossing arm and parking lot dumpster storage. The MITC parking lot entrance is relocated due to close proximity of the busway. A new traffic signal, equipped with TSP, will be analyzed and implemented, and would rest on green for Spruce Street, only turning red when a bus or train is approaching. The signal gives pedestrian protection when no train or BRT vehicle is approaching. MITC parking spaces impacted by the busway and the driveway relocation are replaced by reconfiguring the layout of the parking spaces and circulation aisles resulting in little or no net loss of parking. 	<ul style="list-style-type: none"> To be implemented throughout the construction phase, as required Cost included in overall project cost

Table 8.4-3: Massachusetts Department of Transportation Proposed Section 61 Finding – Summary of Mitigation Commitments (Cont'd)

Environmental Subject Matter	Agency Commitment	Summary of Mitigation Commitments	Schedule and Cost
Wetland Compensation	MassDOT	<ul style="list-style-type: none"> Mitigation will include the construction of stormwater Best Management Practices (BMP's) to manage stormwater from the proposed busway, and to also mitigate the lost functions Wetlands W1 and W2 are capable of. The installation of the BMP's will improve water quality within the watershed by providing treatment and attenuation of stormwater runoff before discharging to the existing stormwater management system which eventually discharges to the Chelsea Miles River (See Sheets 6 and 7 of the Project Plan located in Appendix B). A network / series of stormwater management swales will be planted with the species identified in Table 3.3-1 to improve aesthetic values and increase the potential for utilization by urban songbirds, while providing a food source in the form of hard/soft mast and fruits associated with native herbaceous, shrub, and tree species. No offsite wetland mitigation or replication is proposed. 	<ul style="list-style-type: none"> To be implemented throughout the construction phase, as required Cost included in overall project cost
Right-of-Way (ROW)	MassDOT	<ul style="list-style-type: none"> In order to accommodate the Silver Line Gateway project, right-of-way takings are required. Table 8.2-1 provides a list of the property takings. <ul style="list-style-type: none"> The parking impacts for Massachusetts Water Resources Authority (MWRA) and Eastern Avenue Holdings are the result of the discontinuation of formal or undesignated use of property for parking within the existing MassDOT owned right-of-way. Secondary impacts associated with the project, including right-of-way actions, are minimal. The loss of parking spaces at the Mystic Mall / Market Basket location to provide for the busway turnaround area may be replaced at another on-site location through new construction or restriping. Increased and improved transit service via the Silver Line Gateway project is expected to replace vehicle trips (and associated parking needs) with transit trips. Similar right-of-way actions and loss of parking at the MGH facility on Spruce Street may create the need for MGH to reconfigure their parking lot and/or seek off-site replacement parking. Other secondary impacts related to right-of-way actions are less definitive, involving the loss of parking and storage by adjacent property owners formally or informally utilizing property within the existing MassDOT layout. 	<ul style="list-style-type: none"> To be implemented throughout the construction phase, as required Cost included in overall project cost

9 Response to Comments

This chapter consists of the responses to the comments on EENF followed by the annotated comment letters. The comment letters were received on various dates in December 2013 from the following organizations and one concerned citizen:

- Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Environmental Notification Form – 12/27/2013
- Boston Water and Sewer Commission – 12/06/2013
- WalkBoston - 12/16/2013
- George Bacon - 12/19/2013
- Massachusetts Department of Environmental Protection (DEP) - 12/20/2013
- Massachusetts Water Resources Authority (MWRA) - 12/20/2013
- Metropolitan Area Planning Council (MAPC) - 12/20/2013
- A Better City (ABC) - 12/20/2013
- Chelsea Department of Planning and Development - 12/23/2013



Deval L. Patrick
GOVERNOR

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December 27, 2013

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Silver Line Gateway
PROJECT MUNICIPALITY : Chelsea and Boston
PROJECT WATERSHED : Boston Harbor
EEA NUMBER : 15124
PROJECT PROPONENT : Massachusetts Department of Transportation (MassDOT)
DATE NOTICED IN MONITOR : November 20, 2013

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Environmental Impact Report (EIR). Pursuant to 301 CMR 11.11, MassDOT has requested that I allow the submission of a Single EIR, rather than a Draft and Final EIR. MassDOT should submit a Single EIR in accordance with the limited Scope contained in this Certificate.

Project Description

The project entails the extension of the Silver Line Bus Rapid Transit (BRT) service from South Station in Boston to East Boston and Chelsea along a corridor covering 24.94 acres. The project will require new construction in Chelsea extending from the Massachusetts Port Authority employee parking lot to Central Avenue and Eastern Avenue and ending at the Mystic Mall. No construction is proposed in East Boston, where the bus service will utilize existing transportation infrastructure. The project proposes to replace the Washington Street Bridge in Chelsea, relocate the Chelsea commuter rail station, and provide a shared use path and accessibility for the disabled. The proposed Silver Line Gateway route is approximately five miles long and will require eight to ten dual-mode (diesel/electric) articulated buses that will operate in mixed traffic through East Boston to Eastern Avenue in Chelsea. The route would

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begin at South Station in Boston, stopping at all of the existing Silver Line stations in the Seaport District, use the Ted Williams Tunnel and stop at the Airport Blue Line Station, use the new Coughlin Bypass Road, and then cross into Chelsea via the new Chelsea Street Bridge. West of Eastern Avenue, a new busway will be constructed along MassDOT-owned right-of-way (ROW), the former Grand Junction Railway, to the Mystic Mall with new stations to be constructed at Eastern Avenue, the Box District, downtown Chelsea, and the Mystic Mall. The project will be constructed in two phases. Phase 1 will include the construction of the busway, three of the four proposed BRT stations, and replacement of the Washington Street Bridge. Phase 2 will include the construction of the downtown Chelsea BRT station, the new commuter rail station and the shared-use path, and the demolition of the existing commuter rail station. The project is included in the Boston Metropolitan Planning Organization's 2014 Transportation Improvement Program (TIP).

As part of the project, the Executive Office of Energy and Environmental Affairs (EEA) and the City of Chelsea propose to construct a shared-use path along a section of the former Grand Junction Railroad ROW with an appropriation under the Gateway Cities Parks Program, the Governor's urban parks initiative. The goal of this component of the project is to provide a linear trail from the Chelsea River waterfront to downtown Chelsea that will serve as both a transportation alternative and a recreational facility. The path will parallel the busway where it can be accommodated within and the ROW. From the downtown area, the path will utilize existing city streets. It will connect to other regional path systems including the existing East Boston Greenway, the Northern Strand Trail, and the Malden River trail system. MassDOT will coordinate with the City and EEA to ensure that the design of the Silver Line Gateway accommodates the implementation of the shared-use path.

Potential environmental impacts are associated with the creation of 4.85 acres of new impervious area, including 3.6 acres for the busway, 0.4 acres for the relocated commuter rail station, and 0.85 acres for the shared-use path and off-street elements; and 13,798 sf of alteration to Isolated Vegetated Wetlands (IVW).

Permitting and Jurisdiction

The project is undergoing MEPA review and requires preparation of a mandatory Environmental Impact Report (EIR) pursuant to 301 CMR 11.03(6)(a)(5) and (3)(b)(1)(d) because it requires a State Agency Action, entails the construction of a new rapid transit line along a new, unused or abandoned ROW for transportation of passengers, and will alter 5,000 or more square feet (sf) of IVW. The project will require a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP), Federal Consistency Review by the Office of Coastal Zone Management, and review by the Massachusetts Historical Commission. The project may require a Section 8(m) and Sewer Use Discharge Permits from the Massachusetts Water Resources Authority (MWRA).

The project will also require a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities from the U.S. Environmental Protection Agency (EPA) and a Section 404 General Permit from the U.S. Army Corps of Engineers. The

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Chelsea Conservation Commission has issued a Negative Determination of Applicability for the project.

Because the Proponent is a State Agency and the project will be constructed with Financial Assistance from the Commonwealth, MEPA jurisdiction is broad in scope and extends to any aspect of the project that may, directly or indirectly, cause Damage to the Environment as defined in the MEPA regulations.

Single EIR Request

MassDOT has requested that I allow a Single EIR pursuant to 301 CMR 11.05(7). Consistent with this request, MassDOT submitted an Expanded Environmental Notification Form (EENF) that was subject to an extended comment period of 30 days. The EENF included an alternatives analysis that was based on a comprehensive public outreach program, including four public meetings. Three separate project alternatives were identified in addition to the No Build Alternative. All three share a common routing from South Station through the Seaport District and East Boston utilizing existing transportation facilities (South Boston Piers Transitway, Ted Williams Tunnel, MBTA Blue Line Airport Station, Coughlin Bypass Road, and the Chelsea Street Bridge). Alternative 1 (the Preferred Alternative) would end at the Mystic Mall, Alternative 2 would end at Bellingham Square partially operating on city streets, and Alternative 3 would primarily operate on existing city streets. Alternative 1 was selected as the Preferred Alternative based on public input and the travel time benefits associated with a dedicated busway.

As described in the EENF, the Silver Line Gateway project will enhance livability and promote economic development in Chelsea and East Boston by improving transit access to transit services, relieving overcrowding on existing bus routes, and relieving traffic congestion. It will include the modernization of the Chelsea Commuter Rail Station, which will be relocated to Everett Avenue as part of a new multi-modal Silver Line/Commuter Rail Station that will be fully accessible and compliant with the Americans with Disabilities Act. Additionally, the project will replace the functionally obsolete Washington Avenue Bridge, utilize abandoned railroad ROW (thereby preserving local roadway capacity), and accommodate a shared-use path (thereby encouraging walking and bicycling). The project will leverage many recent public investments such as the new Chelsea Street Bridge, the Coughlin Bypass Road in East Boston, the Airport Blue Line Station, and the purchase by MassDOT of the former Grand Junction Railroad ROW through the center of Chelsea. The project also advances a key component of the Urban Ring (EEA #12565), the goal of which is to provide circumferential transit service around the urban area of Boston. These improvements advance MassDOT's GreenDOT initiative and mode shift goals, and by converting more trips to transit, walking and bicycling, will help to reduce regional greenhouse gas (GHG) emissions. Additionally, the project will serve Environmental Justice (EJ) populations by improving their accessibility to jobs in downtown Boston and the Seaport District.

I note the comments submitted in support of the project by the City of Chelsea, A Better City (ABC), and the Metropolitan Area Planning Council (MAPC). Based on review of the EENF and consultation with State Agencies, I hereby allow MassDOT to submit a Single EIR.

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SCOPE

General

The Proponent should prepare the Single EIR in accordance with the general guidance for outline and content found in Section 11.07 of the MEPA regulations, as modified by this Scope. This Scope is limited to additional information on the on the project, provision of a wetlands replication plan, stormwater management, greenhouse gas analysis, and construction period impacts.

Project Description

The Single EIR should include a thorough description of the entire project and all project elements and construction phases, in clear non-technical language. The Single EIR should clearly describe any changes to the project since the filing of the ENF. The Single EIR should include an existing conditions plan that clearly locates and delineates project elements, wetland resource areas, and adjacent land uses. The Single EIR should include proposed conditions plans illustrating proposed cross-sections and elevations, structures, stormwater management systems, and utility connections associated with the project.

EEA-1

EEA-2

Wetlands

The project will require a 401 WQC from MassDEP for the permanent alteration of 13,798 sf of IVW along the project corridor within the abandoned ROW. The EENF demonstrates that these impacts cannot be avoided if the project is to be located in the former railroad ROW, as compared to a project alternative that would operate on existing city streets. An alternatives analysis will be required as part of the 401 WQC process, as will wetlands replication. The Single EIR should present a replication plan along with a wetlands evaluation, as requested by MassDEP in its comments.

EEA-3

EEA-4

Stormwater Management

The EENF provided a conceptual description of the stormwater management plan for the project. The Single EIR should evaluate stormwater runoff impacts during construction and post-construction in greater detail, including plans showing the design of the post-construction drainage system designed in compliance with the stormwater management regulations. The EENF indicates that most of the project will be new development; therefore, MassDOT must demonstrate in the Single EIR that the relevant sections of the wetlands regulations will be fully met. The Single EIR should also demonstrate that the pre-treatment and structural stormwater Best Management Practices (BMPs) will be met to the maximum extent practicable for the redevelopment portions of the project, as directed in MassDEP's comments.

EEA-5

EEA-6

Additionally, the Single EIR should explain how water quality and quantity impacts would be controlled in accordance with the standards in the stormwater management regulations, including source controls, pollution prevention measures, and erosion and sedimentation controls during construction. Overall, the Single EIR should demonstrate through calculations,

EEA-7

EEA-8

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stormwater system design plans, BMP designs and any supporting information, that the stormwater system will provide adequate protection for wetland resources in conformance with the stormwater regulations and the NPDES permit. MassDOT should also consider implementation of low impact development (LID) techniques and integrated management practices (IMP), as noted in MassDEP's comments. EEA-9

Potential Infrastructure Impacts

The MWRA prohibits the discharge of groundwater to the sanitary sewer system. Because the project would have access to storm drains, the discharge of groundwater to the sanitary sewer system associated with this project is prohibited. The Single EIR should discuss whether MassDOT intends to install gas/oil separators in any vehicle maintenance, storage or wash buildings that may be planned for the project. The Single EIR should also discuss whether the project would impact the MWRA's water and wastewater systems in the sections specified in its comments, and if so, disclose whether the project would require an 8(m) Permit. EEA-10 EEA-11

Greenhouse Gas Emissions

This project is subject to review under the May 5, 2010 MEPA Greenhouse Gas Emission Policy and Protocol (GHG Policy). As a transit project intended to increase ridership and provide alternatives to driving, it may qualify for the de minimis exemption from the GHG Policy. The Single EIR should include a discussion of potential GHG emissions associated with the project to support use of the de minimis exemption. The GHG Policy requires that proponents quantify the project's GHG emissions and identify measures to avoid, minimize and mitigate these emissions. The EENF includes three alternatives for the project and indicates that Alternative 1 (Busway to Mystic Mall) will provide the greatest air quality improvements on a regional basis, as compared to the other two alternatives considered, although the difference in air quality improvements between the three project alternatives is relatively small. The project will require the operation of eight to ten dual-mode articulated buses. The Single EIR should quantify the additional GHG emissions that will be generated by the operation of these buses, which are expected to reduce traffic congestion, as compared to the No Build condition. The Single EIR should also address measures to reduce emissions associated with construction and operation, such as reducing idling of construction equipment or using alternative fuels to power construction vehicles. I encourage MassDOT to consult with the MEPA Office and the Department of Energy Resources regarding the GHG analysis prior to submission of the Single EIR. EEA-12 EEA-13 EEA-14 EEA-15

Construction Period Impacts

The Single EIR should include a draft Construction Management Plan (CMP) describing project activities and their schedule and sequencing, site access and truck routing, and BMPs that will be used to avoid and minimize adverse environmental impacts. The CMP should address potential construction period impacts (including but not limited to land disturbance, noise, vibration, dust, odor, nuisance, vehicle emissions, construction debris, and construction-related traffic) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts. The Single EIR should outline potential measures to address materials EEA-16 EEA-17 EEA-18

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management during the construction period. The Single EIR should discuss measures proposed to protect wetland resource areas during construction, and the CMP should include an erosion control component to address protection of water quality and wetlands resources. The project must comply with MassDEP's Solid Waste and Air Quality Control regulations during construction. MassDOT should note MassDEP's detailed comments regarding compliance with the Massachusetts Contingency Plan (MCP) and recycling of construction and demolition waste.

EEA-19

EEA-20

EEA-21

In accordance with MassDOT's GreenDOT Policy Directive, contractors will be required to install emission control devices on all off-road vehicles to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD).

EEA-22

Mitigation and Section 61 Findings

The Single EIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed draft Section 61 Findings for all State Agency Permits. The Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation, based on the construction phases of the project, estimate the individual cost of each proposed measure, and identify parties responsible for funding and implementing the mitigation measures. The proposed Section 61 Findings will serve as the primary template for permit conditions.

EEA-23

EEA-24

Responses to Comments

The Single EIR should contain a copy of this Certificate and a copy of each comment letter received on the EENF. In order to ensure that the issues raised by commenters are addressed, the Single EIR should include a response to comments received to the extent they are within MEPA jurisdiction. This directive is not intended to and shall not be construed to enlarge the scope of the Single EIR beyond what has been expressly identified in this Certificate. I recommend that the Proponent use either an indexed response to comments format, or a direct narrative response.

EEA-25

Circulation

In accordance with Section 11.16 of the MEPA Regulations and as modified by this Certificate, the Proponent should circulate a hard copy of the Single EIR to each State Agency from which the Proponent will seek permits. The Proponent must circulate a copy of the Single EIR to all other parties that submitted individual written comments. In accordance with 301 CMR 11.16(5), the Proponent may circulate copies of the Single EIR to these other parties in CD-ROM format or by directing commenters to a project website address. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send correspondence accompanying the CD-ROM or website address indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. A CD-ROM copy of the

EEA-26

EEA# 15124

EENF Certificate

December 27, 2013

filing should also be provided to the MEPA Office. Copies of the Single EIR should be made available for review at the Chelsea and East Boston public libraries.

December 27, 2013

Date


Richard K. Sullivan Jr.

Comments received:

12/16/2013	WalkBoston
12/19/2013	George Bacon
12/20/2013	Massachusetts Department of Environmental Protection
12/20/2013	Massachusetts Water Resources Authority
12/20/2013	Metropolitan Area Planning Council
12/20/2013	A Better City (ABC)
12/23/2013	Chelsea Department of Planning & Development

RKS/RAB/rab

9.1 Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Environmental Notification Form (EEA)

EEA-1: “The Single EIR should include a thorough description of the entire project and all project elements and construction phases, in clear, non-technical language. The Single EIR should clearly describe any changes to the project since the filing of the ENF. The Single EIR should include an existing conditions plan that clearly locates and delineates project elements, wetland resource areas, and adjacent land uses.”

Response: This comment is addressed in Sections 2.1 and 2.2 of this Single EIR.

EEA-2: “The Single EIR should include proposed conditions plans illustrating proposed cross-sections and elevations, structures, stormwater management systems, and utility connections associated with the project.”

Response: This comment is addressed in Section 2.3 and Appendix A of this Single EIR.

EEA-3: “The project will require a 401 WQC from MassDEP for the permanent alteration of 13,798 sf of IVW along the project corridor within the abandoned right-of-way. The EENF demonstrates that these impacts cannot be avoided if the project is to be located in the former railroad right-of-way, as compared to a project alternative that would operate on existing city streets. An alternatives analysis will be required as part of the 401 WQC process, as will wetlands replication.”

Response: This comment is addressed in Sections 3.1 through 3.3 of this Single EIR.

EEA-4: “The Single EIR should present a replication plan along with a wetlands evaluation, as requested by MassDEP in its comments.”

Response: This comment is addressed in Sections 3.2 through 3.4 of this Single EIR.

EEA-5: “The EENF provided a conceptual description of the stormwater management plan for the project. The Single EIR should evaluate stormwater runoff impacts during construction and post-construction in greater detail, including plans showing the design of the post-construction drainage system designed in compliance with the stormwater management regulations. The EENF indicates that most of the project will be new development; therefore, MassDOT must demonstrate in the Single EIR that the relevant sections of the wetlands regulations will be fully met.”

Response: This comment is addressed in Sections 4.1 through 4.3 of this Single EIR.

EEA-6: “The Single EIR should also demonstrate that the pre-treatment and structural stormwater Best Management Practices (BMPs) will be met to the maximum extent practicable for the redevelopment portions of the project, as directed in MassDEP’s comments.”

Response: This comment is addressed in Section 4.4 of this Single EIR.

EEA-7: “Additionally, the Single EIR should explain how water quality and quantity impacts would be controlled in accordance with the standards in the stormwater management regulations, including source controls, pollution prevention measures, and erosion and sedimentation controls during construction.”

Response: This comment is addressed in Section 4.5 of this Single EIR.

EEA-8: “Overall, the Single EIR should demonstrate through calculations, stormwater system design plans, BMP designs and any supporting information, that the stormwater system will provide adequate protection for wetland resources in conformance with the stormwater regulations and the NPDES permit.”

Response: This comment is addressed in Section 4.6 of this Single EIR.

EEA-9: “MassDOT should also consider implementation of low impact development (LID) techniques and integrated management practices (IMP), as noted in MassDEP’s comments.”

Response: This comment is addressed in Section 4.7 of this Single EIR.

EEA-10: “The MWRA prohibit the discharge of groundwater to the sanitary sewer system. Because the project would have access to storm drains, the discharge of groundwater to the sanitary sewer system associated with the project is prohibited. The Single EIR should discuss whether MassDOT intends to install gas/oil separators in any vehicle maintenance, storage or wash buildings that may be planned for the project.”

Response: This comment is addressed in Sections 5.1 and 5.2 of this Single EIR.

EEA-11: “The Single EIR should also discuss whether the project would impact the MWRA’s water and wastewater systems in the sections specified in its comments, and if so, disclose whether the project would require an 8(m) Permit.”

Response: This comment is addressed in Sections 5.3 and 5.4 of this Single EIR.

EEA-12: “this project is subject to review under the May 5, 2010 MEPA Greenhouse Gas Emission Policy and Protocol (GHG Policy). As a transit project intended to increase ridership and provide alternatives to driving, it may qualify for the de minimis exemption from the GHG Policy. The Single EIR should include a discussion of potential GHG emissions associated with the project to support the use of the de minimis exemption. The GHG Policy requires that proponents quantify the project’s GHG emissions and identify measures to avoid, minimize and mitigate these emissions. The EENF includes three alternatives for the project and indicates that Alternative 1 (Busway to Mystic Mall) will provide the greatest air quality improvements on a regional basis, as compared to the other two alternatives considered, although the difference in air quality improvements between the three project alternatives is relatively small.”

Response: This comment is addressed in Section 6.1 of this Single EIR.

EEA-13: “The project will require the operation of eight to ten dual-mode articulated buses. The Single EIR should quantify the additional GHG emissions that will be generated by the operation of these buses, which are expected to reduce traffic congestion, as compared to the No-Build condition.”

Response: This comment is addressed in Section 6.2 of this Single EIR.

EEA-14: “The Single EIR should also address measures to reduce emissions associated with construction and operation, such as reducing idling of construction equipment or using alternative fuels to power construction vehicles.”

Response: This comment is addressed in Section 6.3 of this Single EIR.

EEA-15: “I encourage MassDOT to consult with the MEPA Office and the Department of Energy Resources regarding the GHG analysis prior to submission of the Single EIR.”

Response: MassDOT met with the MEPA Office on March 3, 2014, to discuss and confirm the methods and contents of the GHG analysis contained in Section 6 of this Single EIR.

EEA-16: “The Single EIR should include a draft Construction Management Plan (CMP) describing project activities and their schedule and sequencing, site access and truck routing, and BMPs that will be used to avoid and minimize adverse environmental impacts.”

Response: This comment is addressed in Section 7.1 of this Single EIR.

EEA-17: “The CMP should address potential construction period impacts (including but not limited to land disturbance, noise, vibration, dust, odor, nuisance, vehicle emissions, construction debris, and construction-related traffic) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts.”

Response: This comment is addressed in Section 7.2 of this Single EIR.

EEA-18: “The Single EIR should outline potential measures to address materials management during the construction period.”

Response: This comment is addressed in Section 7.3 of this Single EIR.

EEA-19: “The Single EIR should discuss measures proposed to protect wetland resource areas during construction, and the CMP should include an erosion control component to address protection of water quality and wetlands resources.”

Response: This comment is addressed in Sections 7.4 and 7.5 of this Single EIR.

EEA-20: “The project must comply with MassDEP’s Solid Waste and Air Quality Control regulations during construction.”

Response: This comment is addressed in Section 7.6 of this Single EIR.

EEA-21: “MassDOT should note MassDEP’s detailed comments regarding compliance with the Massachusetts Contingency Plan (MCP) and recycling of construction and demolition waste.”

Response: This comment is addressed in Section 7.7 of this Single EIR.

EEA-22: “In accordance with MassDOT’s GreenDOT Policy Directive, contractors will be required to install emission control devices on all off-road vehicles to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD).”

Response: This comment is addressed in Section 7.8 of this Single EIR.

EEA-23: “The Single EIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed draft Section 61 Findings for all State Agency Permits.”

Response: This comment is addressed in Sections 8.1 and 8.2 of this Single EIR.

EEA-24: “The Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation, based on the construction phases of the project, estimate the individual cost of each proposed measure, and identify parties responsible for funding and implementing the mitigation measures.”

Response: This comment is addressed in Section 8.3 of this Single EIR.

EEA-25: “The Single EIR should contain a copy of this Certificate and a copy of each comment letter received on the EENF. In order to ensure that the issues raised by commenters are addressed, the Single EIR should include a response to comments received to the extent they are within MEPA

jurisdiction...I recommend that the Proponent use either an indexed response to comments format, or a direct narrative response.”

Response: This comment is addressed in Section 9 of this Single EIR.

EEA-26: “In accordance with Section 11.16 of the MEPA Regulations and as modified by this Certificate, the Proponent should circulate a hard copy of the Single EIR to each State Agency from which the Proponent will seek permits. The Proponent must circulate a copy of the Single EIR to all other parties that submitted individual written comments.”

Response: This comment is addressed in Section 10 of this Single EIR.

**Boston Water and
Sewer Commission**

980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000



December 6, 2013

Mr. Richard K. Sullivan, Secretary
Executive Office of Energy & Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Silver Line Gateway Project
Boston/ Chelsea

Dear Secretary Sullivan:

The Boston Water and Sewer Commission (Commission) has reviewed the Expanded Environmental Notification Form (ENF) for the proposed Silver Line Gateway Project. The project proponent, MassDOT, proposes to extend the Silver Line Bus service from the Seaport district in South Boston to East Boston and the Mystic Mall in Chelsea. The South Boston/ East Boston segments of this project will utilize existing roadways including the Ted Williams Tunnel, airport service roads, the new Coughlin Bypass Road and the new Chelsea Street Bridge. No significant improvements are proposed for the South Boston/ East Boston segments of this project. The Chelsea segment of this project will extend along former railroad right-of-way and to the Mystic Mall. This letter provides the Commission's comments on the ENF.

The Commission maintains water mains, sewer lines and storm drains along the proposed route of the project in South Boston and East Boston including the Airport service roads. The ENF indicates that there is little, if any, new construction in the Boston segments of this project. Any new infrastructure proposed, no matter how minor, must not conflict with Commission facilities. During early phase of this project, the designer should contact the Commission's Engineering Customer Services Department to review the location of any proposed construction with the City of Boston. BWSC -1

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/rja

cc: MassDOT
M. Zlody, BED
P. Larocque, BWSC

9.2 Boston Water and Sewer Commission (BWSC)

BWSC-1: “Any new infrastructure proposed, no matter how minor, must not conflict with Commission facilities. During early phase of this project, the designer should contact the Commission’s Engineering Customer Services Department to review the location of any proposed construction within the City of Boston.”

Response: MassDOT will coordinate with BWSC regarding any proposed project-related construction activities in South Boston and East Boston.



December 16, 2013

Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs
Attn: Rick Bourre'
100 Cambridge St., Suite 900
Boston MA 02114

RE: Comments on the Expanded Environmental Notification Form for the Silver Line Gateway proposal – MEPA# 15124

Dear Secretary Sullivan:

WalkBoston has reviewed the Expanded Environmental Notification Form for the Silver Line Gateway Bus Rapid Transit proposal, which will provide additional MBTA service between South Station and the Seaport District into Chelsea and East Boston. **The new transit service will be a welcome addition for residents needing improved access into the heart of the metropolitan area.**

The focus of this proposal is new transit service that will extend from Logan Airport to the Mystic Mall in Chelsea, on routes that use both existing streets and a new busway to be constructed on former rail right-of-way. The route from Logan Airport into Chelsea follows existing streets (including the Coughlin Bypass Road under several East Boston streets), the Chelsea Street Bridge and Eastern Avenue to connect to a new off-road busway to be built on an abandoned right-of-way of the former Grand Union Railway. When this right-of-way reaches the main MBTA line that serves coastal cities such as Lynn, Salem and Beverly, the busway will be parallel to the rail line and separated by a fence.

Although virtually all of the right-of-way will be used for the new bus service in Chelsea, sufficient space exists to construct an 8' wide multi-use path parallel to the busway. The multi-use path is expected to provide access between community origins and the new stations on the busway, as well as providing recreation for residents.

The right-of-way for both the busway and the walkway is wholly owned by the Commonwealth of Massachusetts, which purchased it from CSX as a potential location for transportation improvements.

Our comments are as follows:

1. The existence of the abandoned rail line is especially fortunate for the City of Chelsea, as it facilitates construction of new transit service in a community that is underserved by direct transit line connections to job centers. WB-1
2. Travel times between Chelsea and Logan Airport, as well as the Seaport District and Downtown Boston will be improved, increasing the number of destinations accessible by environmental justice populations living in Chelsea. WB-2

MAKING MASSACHUSETTS MORE WALKABLE

Old City Hall | 45 School Street | Boston MA 02108 | T: 617.367.9255 | F: 617.367.9285 | info@walkboston.org | www.walkboston.org

- | | |
|---|------|
| 3. The proposed busway lies at the boundary of a large residential area within the city, and separates it from an industrial district. The location should offer good access for many residents from their homes or from nearby workplaces. | WB-3 |
| 4. The proposed busway station serving Downtown Chelsea is located a bit farther from the city center than the existing commuter rail station. Because it is farther, signage will be important to help people find it, and marketing may be needed to encourage use of the station. This marketing could center on the large congregation of transit users in Bellingham Square at the heart of the central business district. | WB-4 |
| 5. The existing commuter rail station is to be relocated behind the Mystic Mall. The proposed site is surrounded by retail and industrial uses, but also a considerable amount of vacant land. It would be useful to know of regional or local development plans that might provide increased density of land uses in this area that could generate traffic for the new bus service. | WB-5 |
| 6. Although the Mystic Mall station is located in a district that is low-density in terms of land uses, it is also a job center with its many retail and industrial uses, and will be made more accessible to Chelsea residents because of this new service. | WB-6 |
| 7. The recommended off-vehicle fare collection will require careful explanation to new users. | WB-7 |

We appreciate your consideration of our comments and look forward to your responses to them. Please feel free to contact WalkBoston with questions you may have.

Sincerely,



Wendy Landman
Executive Director

Cc: MassDOT Highway Administrator Frank DePaola
MBTA General Manager Beverly Scott

9.3 WalkBoston (WB)

WB-1: “The existence of the abandoned rail line is especially fortunate for the City of Chelsea, as it facilitates construction of new transit service in a community that is underserved by direct transit line connections to job centers.”

Response: Reuse of the abandoned freight rail right-of-way as a dedicated busway will significantly improve transit travel time, reliability, and intermodal connections between job centers and environmental justice populations.

WB-2: “Travel times between Chelsea and Logan Airport, as well as the Seaport District and Downtown Boston will be improved, increasing the number of destinations accessible by environmental justice populations living in Chelsea.”

Response: See response to comment WB-1.

WB-3: “The proposed busway lies at the boundary of a large residential area within the city, and separates it from an industrial district. The location should offer good access for many residents from their homes or from nearby workplaces.”

Response: Comment noted.

WB-4: “The proposed busway station serving Downtown Chelsea is located a bit farther from the city center than the existing commuter rail station. Because it is farther, signage will be important to help people find it, and marketing may be needed to encourage use of the station. This marketing could center on the large congregation of transit users in Bellingham Square at the heart of the central business district.”

Response: The proposed Downtown Chelsea BRT station will be located between Washington Avenue and Arlington Street, which is the same location as the south platform of the existing Chelsea Commuter Rail Station. The overall walk distance between Bellingham Square and the BRT station will be less than it is today with the existing commuter rail station. This proximity is accomplished with a direct visual and physical connection between the BRT inbound station platform and Washington Avenue via a new accessible ramp and MBTA signage. For the BRT outbound platform the distance will be the same as it is now from Bellingham Square via Sixth Street. MassDOT will conduct a public awareness program regarding the BRT station locations and the relocated commuter rail station. MassDOT will work with the City of Chelsea as well as stakeholders and MBTA riders to develop an effective signage program.

WB-5: “The existing commuter rail station is to be relocated behind the Mystic Mall. The proposed site is surrounded by retail and industrial uses, but also a considerable amount of vacant land. It would be useful to know of regional or local development plans that might provide increased density of land uses in this area that could generate traffic for the new bus service.”

Response: The City of Chelsea has identified a number of potential planned or permitted developments within the vicinity of the Silver Line Gateway project, in addition to ongoing planning and redevelopment efforts. MassDOT and City of Chelsea officials have also had discussions with the owners of properties adjacent to Mystic Mall station who have expressed interest in mixed-use development that would take advantage of the proximity to the commuter rail and BRT station locations.

WB-6: “Although the Mystic Mall station is located in a district that is low-density in terms of land uses, it is also a job center with its many retail and industrial uses and will be made more accessible to Chelsea residents because of this new service.”

Response: The proposed improvements in transit service and access will benefit residents, retail customers and employees of businesses located in Chelsea.

WB-7: “The recommended off-vehicle fare collection will require careful explanation to new users.”

Response: Off-vehicle fare collection enables all-door boarding at stations, which significantly reduces boarding time and overall trip times, and is consistent with national and international best practices for BRT systems. Station design will include signage providing passengers with directions relative to the off-vehicle fare collection method.

80 Pleasant Street
Ayer, MA 01432
December 19, 2013

Via email

Secretary Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
Richard Bourre, EEA No. 15124
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Sullivan:

I would like to submit the following comments on the proposal by MADOT to extend the Silver Line into Chelsea along an abandoned railroad right-of-way.

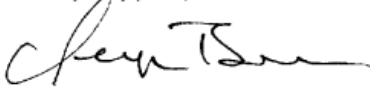
I am one of a number of people who commute to work on Griffin Way in Chelsea via public transportation. The typical commuter takes the MBTA bus from downtown Boston to City Hall in Chelsea and then walks along Library Street. At the end of Library Street, they cross the abandoned ROW and walk over to Griffin Way along the city-owned, undeveloped portion of the Griffin Way right-of-way. GB-1

I am concerned that the proposed busway will be fenced, creating a barrier to these pedestrians trying to get to their places of employment. This route along Library Street is the only practical way to get from the bus stop to Griffin Way. If this access is lost, the alternate route along Eastern Avenue is not only much longer (4600 ft versus 2200 ft), but very hazardous in winter months. Most commuters would likely find this a non-viable option and abandon public transportation. GB-1

The proposed Silver Line would not be a suitable replacement mode of transportation because it would add a significant amount of time to the trip from the north side of Boston to Chelsea. If the Box District stop is not accessible from the east side, the closest stop would be at Eastern Avenue, also requiring a hazardous walk in winter. Furthermore, the Silver Line schedule will be disrupted whenever the Chelsea Street Bridge opens for marine traffic. GB-2
GB-3

I applaud the proposal to bring the Silver Line to Chelsea, but it should enhance the existing public transportation patterns, not disrupt them. I am asking that the proponent include a pedestrian crossing and walkway from Library Street to Griffin Way in the project. GB-4

Very truly yours,



George Bacon

9.4 George Bacon (GB)

GB-1: “I am one of a number of people who commute to work on Griffin Way in Chelsea via public transportation. The typical commuter takes the MBTA bus from downtown Boston to City Hall in Chelsea and then walks along Library Street. At the end of Library Street, they cross the abandoned right-of-way and walk over to Griffin Way along the city-owned, undeveloped portion of the Griffin Way right-of-way.

I am concerned that the proposed busway will be fenced, creating a barrier to these pedestrians trying to get to their places of employment. This route along Library Street is the only practical way to get from the bus top to Griffin Way. If this access is lost, the alternate route along Eastern Avenue is not only much longer (4600 ft versus 2200 ft), but very hazardous in winter months. Most commuters would likely find this a non-viable option and abandon public transportation.”

Response: The project includes a shared-use path along the west side of the proposed busway between Eastern Avenue and Chestnut Street in Chelsea, with a neighborhood connection to the shared-use path provided at the east end of Library Street. The shared-use path will cross the busway at-grade at Cottage Street, which connects with Eastern Avenue. The other at-grade pedestrian crossing of the busway will be provided at the Box District Station, which can be accessed from Library Street via a short section of Highland Street. The available right-of-way on the east side of the busway in this area is not adequate to provide a parallel path on the east side of the busway between the Box District Station and Griffin Way at this time.

GB-2: “The proposed Silver Line would not be a suitable replacement mode of transportation because it would add a significant amount of time to the trip from the north side of Boston to Chelsea. If the Box District stop is not accessible from the east side, the closest stop would be at Eastern Avenue, also requiring a hazardous walk in winter.”

Response: The proposed Silver Line Gateway service will be in addition to the existing local bus routes serving Chelsea. Silver Line Gateway is not replacing local bus routes. The planned Eastern Avenue Station is less than a quarter mile from Griffin Way. MassDOT is coordinating with the City of Chelsea during final design to maximize pedestrian and bicycle connectivity with the planned Silver Line Gateway stations.

GB-3: “Furthermore, the Silver Line schedule will be disrupted whenever the Chelsea Street Bridge opens for marine traffic.”

Response: The impact of Chelsea Street Bridge openings on Silver Line operations will be mitigated by improved coordination between the bridge operator and MBTA operations. Bridge operations have been under the control of MassDOT since mid-2013 and improved notification protocols and communication will enable the Silver Line to adjust operations to mitigate impact on passengers. Passenger information systems at the BRT stations will enable information about bridge openings to be communicated to passengers.

GB-4: “I applaud the proposal to bring the Silver Line to Chelsea, but it should enhance the existing public transportation patterns, not disrupt them. I am asking that the proponent include a pedestrian crossing and walkway from Library Street to Griffin Way in the project.”

Response: See response to comment GB-1.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIVIMELI
Commissioner

December 20, 2013

Richard K. Sullivan Jr., Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Chelsea, East Boston
Silver Line Gateway
EEA # 15124

Attn: MEPA Unit

Dear Secretary Sullivan:

The Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Expanded Environmental Notification Form (EENF) submitted by the Massachusetts Department of Transportation (MassDOT) to extend the Silver Line Bus Rapid Transit service from South Station and the Seaport District to East Boston and Chelsea, which covers about 24.94 acres in Chelsea and East Boston (EEA# 15124). The project includes new construction in Chelsea, extending from the Massport employee parking garage to Central Avenue and Eastern Avenue to the Mystic Mall. The project proposes to relocate the Chelsea commuter rail station and provide handicap accessibility. In addition, the Washington Avenue Bridge will be replaced. The construction of Phase I includes the bridge replacement, busway, and three of the four stations; Phase II includes construction of the downtown Chelsea station followed by demolition of the existing station, a new commuter rail station west of Everett Avenue, and construction of a shared use path. The expanded bus transit route will require eight to ten dual-mode articulated buses. With the submittal of an Expanded ENF, MassDOT is requesting a Single Environmental Impact Report review. The Department (MassDEP) provides the following comments.

Of the three alternatives evaluated, the preferred project would extend the Silver Line Gateway route from East Boston through mixed traffic to Eastern Avenue. West of Eastern Avenue, a new busway would be constructed along the MassDOT right-of-way (Grand Junction Railroad) to the Mystic Mall. New stations also would be constructed at Eastern Avenue, Box District, downtown Chelsea, and the Mystic Mall.

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep
Printed on Recycled Paper

Wetlands and 401 Water Quality Certification

The EENF indicates that the project would alter 13,798 square feet (sf) of isolated vegetated wetlands (IVW) along the project route within the abandoned railroad right-of-way. These wetland resource area impacts require a 401 Water Quality Certificate from MassDEP, pursuant to 314 CMR 9.06(1). According to the EENF, a Massachusetts General Permit, under Section 404 Permit from the Army Corps of Engineers also is needed. An alternatives analysis is required as part of the 401 water quality certification process, and information in the EENF and EIR on alternatives that consider measures to avoid, minimize, and mitigate wetland impacts will be considered by MassDEP in permitting. Practicable alternatives that are applicable to 401 permitting are those that can be done after taking into consideration costs, existing technology, and logistics in light of overall project purposes. The EENF indicates that the Alternative 3 route would not alter wetlands resources; it would use Chelsea Streets and short sections of dedicated lanes.

In addition, wetlands replication will be necessary. At the time of the EENF review, the proponent had not yet developed a mitigation plan (page 6-56). However, it is requested that this information be provided in the EIR with a wetlands evaluation.

Stormwater

Although the EENF has provided a conceptual description of the stormwater management plan, stormwater runoff impacts during construction and post-construction will need to be evaluated in greater detail in the EIR, and plans showing the post-development drainage system should be designed in compliance with the MassDEP Stormwater Management regulations (SMR). The EENF indicates that most of the project is new development, where MassDOT will need to demonstrate that the wetland regulations at 310 CMR 10.05(6)(k)1-6, and 8-10 are met fully. It also will be necessary to demonstrate compliance with 310 CMR 10.05(6)(k)2-3, and show that the pretreatment and structural stormwater BMP requirements in 310 CMR 10.05(6)(k)4-6 are met to the maximum extent practicable for the redevelopment portions of the project. Maximum extent practicable means that all reasonable efforts have been made to meet the stormwater standards, in a complete evaluation of each stormwater standard, including the use of environmentally sensitive site designs. Where full compliance cannot be achieved, MassDOT will need to demonstrate that the highest practicable level of stormwater management (310 CMR 10.05(6)(o)) is being implemented. In addition, the redevelopment portions of the project must be designed to fully comply with 310 CMR 10.05(6)(k)8-10.

The EIR should explain how water quality and quantity impacts would be controlled in compliance with the SMR standards for water quality and quantity impacts. The EIR should demonstrate that source controls, pollution prevention measures, and erosion and sediment controls during construction will be designed to comply with the SMR and the *Stormwater Management Handbooks*, and standards for water quality and quantity impacts and for consistency with the NPDES Phase II Storm Water Program. Calculations, stormwater system design plans at a readable scale, best management practice (BMP) designs, and supporting information should demonstrate that the stormwater system design provides adequate protection for wetland resources in conformance with the stormwater regulations and NPDES permit.

Low Impact Development

The stormwater regulations require that consideration be given to low impact development (LID) and the use of integrated management practices (IMP) for control of stormwater, either alone or in combination with conventional drainage control measures. LID is an approach to stormwater management that minimizes runoff impacts by maintaining and mimicking existing hydrologic functions through site design techniques such as disconnecting runoff flow pathways and dispersing stormwater control across the site, reducing imperviousness, and minimizing clearing and grading while preserving natural resources and drainage patterns. DEP-14

Massachusetts Contingency Plan/M.G.L. c.21E

Contaminated Soil and Groundwater: According to the EENF, there are numerous sites in the vicinity of the project that are contaminated, pursuant to the Massachusetts Contingency Plan (MCP)/21E, including nearby sites with Activity and Use Limitations. The project proponent is advised that excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and OSHA. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur. The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits. If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not exacerbated by these activities. Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas. The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs. An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors. If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted. DEP-15
DEP-16
DEP-17
DEP-18
DEP-19
DEP-20
DEP-21
DEP-22

Potential Indoor Air Impacts: Parties constructing and/or renovating buildings in contaminated areas should consider whether chemical or petroleum vapors in subsurface soils and/or groundwater could impact the indoor air quality of the buildings. All relevant site data, such as contaminant concentrations in soil and groundwater, depth to groundwater, and soil gas concentrations should be evaluated to determine the potential for indoor air impacts to existing or proposed building structures. Particular attention should be paid to the vapor intrusion pathway for sites with elevated levels of chlorinated volatile organic compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE). MassDEP has additional information about the vapor intrusion pathway on its website at <http://www.mass.gov/dep/cleanup/laws/vifs.htm>. DEP-23
DEP-24
DEP-25

New Structures and Utilities: Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site. Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities. Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations. DEP-26 DEP-27 DEP-28

Greenhouse Gas (GHG) Emissions

According to the EENF, the purpose of the project proposed by MassDOT is to enhance livability and economic development in East Boston and Chelsea. The project also is expected to help to relieve traffic congestion, improve mass transit access to areas at the edge of Chelsea and East Boston along the proposed route, and relieve overcrowding on existing bus routes. The project requires an analysis of the project's anticipated greenhouse gas emissions under MEPA's *Greenhouse Gas Emissions Policy and Protocol*. The Massachusetts Clean Energy and Climate Plan 2020 estimates that MEPA project reviews will contribute by reducing approximately 100,000 Metric Tons of CO₂ equivalent by 2020. Therefore, MassDEP encourages the proponent to fully consider opportunities to reduce mobile source GHG emissions in the EIR. DEP-29

The MEPA GHG policy requires that proposed projects comply with the applicable terms of the policy including a quantification of the project's GHG emissions and the identification of measures to avoid, minimize, or mitigate GHG emissions. The EENF includes three alternatives for the project, and it is reported that, on a regional basis, the proposed project, Alternative 1 (Busway to Mystic Mall) provides the greatest air quality improvements when compared with two other alternatives (Appendix E, CTPS air quality analysis). However, the air quality improvements are similar among all alternatives. The project is reported to require an additional eight to ten dual-mode articulated buses. The EIR should quantify the additional GHG emissions that will be generated from the no-build analysis and compare it to the CO₂ generated by the preferred alternative that is expected to reduce congestion. DEP-30 DEP-31

Recycling

The project includes demolition and reconstruction, which will generate a significant amount of construction and demolition (C&D) waste. Although the ENF has not made a commitment to recycling construction debris, MassDEP encourages the project proponent to incorporate C&D recycling activities as a sustainable measure for the project. In addition, the proponent is advised that demolition activities must comply with both Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. Chapter 40, Section 54, which provides: DEP-32 DEP-33

"Every city or town shall require, as a condition of issuing a building permit or license for the demolition, renovation, rehabilitation or other alteration of a building or structure, that the debris resulting from such demolition, renovation, rehabilitation or alteration be disposed of in a properly licensed solid waste disposal facility, as defined by Section one hundred and fifty A of Chapter one hundred and eleven. Any such permit or license shall indicate the location of the facility at which the debris is to be disposed. If for any reason, the debris will not be disposed as

indicated, the permittee or licensee shall notify the issuing authority as to the location where the debris will be disposed. The issuing authority shall amend the permit or license to so indicate.”

For the purposes of implementing the requirements of M.G.L. Chapter 40, Section 54, MassDEP considers an asphalt, brick, and concrete (ABC) rubble processing or recycling facility, (pursuant to the provisions of Section (3) under 310 CMR 16.05, the Site Assignment regulations for solid waste management facilities), to be conditionally exempt from the site assignment requirements, if the ABC rubble at such facilities is separated from other solid waste materials at the point of generation. In accordance with 310 CMR 16.05(3), ABC can be crushed on-site with a 30-day notification to MassDEP. However, the asphalt is limited to weathered bituminous concrete, (no roofing asphalt), and the brick and concrete must be uncoated or not impregnated with materials such as roofing epoxy. If the brick and concrete are not clean, the material is defined as construction and demolition (C&D) waste and requires either a Beneficial Use Determination (BUD) or a Site Assignment and permit before it can be crushed.

Pursuant to the requirements of 310 CMR 7.02 of the Air Pollution Control regulations, if the ABC crushing activities are projected to result in the emission of one ton or more of particulate matter to the ambient air per year, and/or if the crushing equipment employs a diesel oil fired engine with an energy input capacity of three million or more British thermal units per hour for either mechanical or electrical power which will remain on-site for twelve or more months, then a plan application must be submitted to MassDEP for written approval prior to installation and operation of the crushing equipment. DEP-34

Asbestos removal notification on permit form ANF 001 and building demolition notification on permit form AQ06 must be submitted to MassDEP at least 10 working days prior to initiating work. Except for vinyl asbestos tile (VAT) and asphaltic-asbestos felt and shingles, the disposal of asbestos containing materials within the Commonwealth must be at a facility specifically approved by MassDEP, (310 CMR 19.061). No asbestos containing material including VAT, and/or asphaltic-asbestos felts or shingles may be disposed at a facility operating as a recycling facility, (310 CMR 16.05). In addition, the demolition project contain asbestos, the project proponent is advised that asbestos and asbestos-containing waste material are a special waste as defined in the Solid Waste Management regulations, (310 CMR 19.061). The disposal of the asbestos containing materials outside the jurisdictional boundaries of the Commonwealth must comply with all the applicable laws and regulations of the state receiving the material. DEP-35
DEP-36
DEP-37

The demolition activity also must conform to current Massachusetts Air Pollution Control regulations governing nuisance conditions at 310 CMR 7.01, 7.09 and 7.10. As such, the proponent should propose measures to alleviate dust, noise, and odor nuisance conditions, which may occur during the demolition. Again, MassDEP must be notified in writing, at least 10 days in advance of removing any asbestos, and at least 10 days prior to any demolition work. The removal of asbestos from the buildings must adhere to the special safeguards defined in the Air Pollution Control regulations, (310 CMR 7.15 (2)). DEP-38
DEP-39
DEP-40
DEP-41

Massachusetts Contingency Plan/M.G.L. c.21E

Contaminated Soil and Groundwater: The EENF indicates that there are a number of properties adjacent to the proposed transit route where contamination has been identified and reported to have been addressed. However, there also are sites with activity and use limitations nearby. Accordingly, the project proponent is advised that excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and OSHA. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur. The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits. If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not exacerbated by these activities. Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas. The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs. An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors. If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted.

DEP-15

DEP-16

DEP-17

DEP-18

DEP-19

DEP-20

DEP-21

DEP-22

New Structures and Utilities: Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site. Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities. Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations.

DEP-26

DEP-27

DEP-28

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us, MEPA Review Coordinator at (978) 694-3338.

Sincerely,



John D. Viola

Deputy Regional Director

Silver Line Gateway EEA # 15124

cc: Brona Simon, Massachusetts Historical Commission
Heidi Davis, Phil DiPietro, MassDEP-NERO
Jerome Grafe, MassDEP-Boston

9.5 Department of Environmental Protection (DEP)

DEP-1: “The EENF indicates that the project would alter 13,798 square feet (sf) of isolated vegetated wetlands (IVW) along the project route within the abandoned railroad right-of-way. These wetland resource area impacts require a 401 Water Quality Certificate from MassDEP, pursuant to 314 CMR 9.06(1). According to the EENF, a Massachusetts General Permit, under Section 404 Permit from the Army Corps of Engineers also is needed. An alternatives analysis is required as part of the 401 water quality certification process, and information in the EENF and EIR on alternatives that consider measures to avoid, minimize, and mitigate wetland impacts will be considered by MassDEP in permitting.”

Response: An Alternatives Analysis is included in the 401 Water Quality Certificate application. Further details are also provided in Chapter 3 of this Single EIR.

DEP-2: “Practicable alternatives that are applicable to 401 permitting are those that can be done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.”

Response: Comment acknowledged: all practicable alternatives will be considered.

DEP-3: “The EENF indicates that the Alternative 3 route would not alter wetlands resources; it would use Chelsea Streets and short sections of dedicated lanes.”

Response: Refer to Section 3.1 of this Single EIR for a summary of why the Preferred Alternative was chosen instead of Alternative 3.

DEP-4: “In addition, wetlands replication will be necessary. At the time of the EENF review, the proponent had not yet developed a mitigation plan (page 6-56). However, it is requested that this information be provided in the EIR with a wetlands evaluation.”

Response: Subsequent to the filing of the Expanded ENF and issuance of the Secretary’s Certificate, MassDOT attended a field visit with MassDEP and ACOE staff, during which time the MassDEP and ACOE staff indicated that replication will not be required and that replacement of the stormwater management functions of the affected wetland areas by man-made stormwater management techniques will suffice. A detailed description of the stormwater BMPs is provided in Chapter 4 of the Single EIR.

DEP-5: “stormwater runoff impacts during construction and post-construction will need to be evaluated in greater detail in the EIR.”

Response: Construction and post-construction stormwater impacts are described in greater detail in Chapter 4 of the Single EIR.

DEP-6: “plans showing the post-development drainage system should be designed in compliance with the MassDEP Stormwater Management regulations (SMR).”

Response: All drainage systems will be designed in compliance with MassDEP Stormwater Management regulations. Plans of the proposed drainage system were submitted to MassDEP as part of the 401 WQC application (see Appendix B) and are also included in the 25% plan set (see Appendix A).

DEP-7: “The EENF indicates that most of the project is new development, where MassDOT will need to demonstrate that the wetland regulations at 310 CMR 10.05(6)(k)1-6, and 8-10 are met fully.”

Response: Since the EENF was filed, a site visit and multiple discussions have been held with both MassDEP and the Army Corps of Engineers. During the site visit, the representative from MassDEP indicated that the entire project can be classified as a redevelopment since the previous use was for transportation and there is still ballast present along most of the corridor. The Single EIR includes

information on how the project complies with the applicable MassDOT stormwater standards to the maximum extent practicable for redevelopment. Further information is provided in Chapter 4.

DEP-8: “It also will be necessary to demonstrate compliance with 310 CMR 10.05(6)(k)2-3,”

Response: As indicated above, discussions regarding the cited regulation governing stormwater management and a site visit have been held with both MassDEP and the Army Corps of Engineers. The representative from MassDEP indicated that entire project could be classified as “redevelopment” since the previous use was for transportation and there is still railroad ballast present along most of the corridor. The Single EIR includes information on how the project complies with the applicable MassDOT stormwater standards to the maximum extent practicable in Chapter 4.

The citation refers to the following section of the Massachusetts Wetlands Protection Act:

“(6) Orders of Conditions Regulating Work and Orders of Resource Area Delineation

(k) No Area Subject to Protection Under M.G.L. c. 131, § 40 other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area may be altered or filled for the impoundment or detention of stormwater, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill. Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects that are subject to regulation under M.G.L.c. 131, § 40 including site preparation, construction, and redevelopment and all point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L.c. 131, § 40 or within the Buffer Zone shall be provided with stormwater best management practices to attenuate pollutants and to provide a setback from the receiving waters and wetlands in accordance with the following Stormwater Management Standards as further defined and specified in the Massachusetts Stormwater Handbook:

2. Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

3. Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from the pre-development conditions based on soil type.

This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.”

DEP-9: “show that the pretreatment and structural stormwater BMP requirements in 310 CMR 10.05(6)(k)4-6 are met to the maximum extent practicable for the redevelopment of the project. Maximum extent practicable means that all reasonable efforts have been made to meet the stormwater standards, in a complete evaluation of each stormwater standard, including the use of environmentally sensitive site designs. Where full compliance cannot be achieved, MassDOT will need to demonstrate that the highest practicable level of stormwater management (310 CMR 10.05(6)(o)) is being implemented.”

Response: Chapter 4 of the Single EIR contains information on how the project complies with the applicable MassDEP stormwater standards to the maximum extent practicable.

DEP-10: “In addition, the redevelopment portions of the project must be designed to fully comply with 310 CMR 10.05(6)(k)8-10.”

Response: Chapter 4 of the Single EIR contains information on how the project complies with the applicable MassDEP stormwater standards to the maximum extent practicable. Drainage improvements have been designed for full compliance with 310 CMR 10.05(6)(k)8-10 .

DEP-11: “The EIR should explain how water quality and quantity impacts would be controlled in compliance with the SMR standards for water quality and quantity impacts.”

Response: The Single EIR addresses how the water quality and quantity impacts will be controlled in Chapter 4.

DEP-12: “The EIR should demonstrate that source controls, pollution prevention measures, and erosion and sediment controls during construction will be designed to comply with the SMR and the Stormwater Management Handbooks, and standards for water quality and quantity impacts and for consistency with the NPDES Phase II Storm Water Program.”

Response: Pollution prevention measures and erosion control devices are addressed in the Single EIR in Chapters 4 (Stormwater Management) and 7 (Construction Period Impacts).

DEP-13: “Calculations, stormwater system design plans at a readable scale, best management practice (BMP) designs, and supporting information should demonstrate that the stormwater system design provides adequate protection for wetland resources in conformance with the stormwater regulations and NPDES permit.”

Response: The Single EIR includes calculations and plans of the proposed stormwater system in Chapter 4 and in Appendix A (construction plans) and C (Stormwater Calculations).

DEP-14: “The stormwater regulations require that consideration be given to low impact development (LID) and the use of integrated management practices (IMP) for control of stormwater, either alone or in combination with conventional drainage control measures.”

Response: Low impact development and integrated management practices will be used where feasible.

DEP-15: “According to the EENF, there are numerous sites in the vicinity of the project that are contaminated, pursuant to the Massachusetts Contingency Plan (MCP)/21E, including nearby sites with Activity and Use Limitations. The project proponent is advised that excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and OSHA. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur.”

Response: The appropriate notifications and plans will be filed and the necessary permits and approvals obtained in advance to avoid the potential for delays.

DEP-16: “The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions.”

Response: As necessary, prior submittal of appropriate plans to MassDEP will occur.

DEP-17: “If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits.”

Response: A soil boring program was conducted during December 2013 and January 2014 to assess concentrations of potential contaminants in soil. The program was designed to collect soil samples from 20 borings along the proposed route for chemical analysis at a subcontracted analytical laboratory. The data will be evaluated and used to develop appropriate filings and plans for the construction.

DEP-18: “If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not exacerbated by these activities.”

Response: As necessary, plans will be developed to properly manage dewatering activities.

DEP-19: “Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas.”

Response: Dust suppression will be implemented along the entire project area. In addition, real-time air monitoring will be conducted during excavation and handling of soil identified in one area as having elevated concentrations of chromium. Additional analytical results are pending to determine if real-time air monitoring will be needed in any other project area locations.

DEP-20: “The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs.”

Response: See response to comment DEP-19.

DEP-21: “An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors.”

Response: Soil sampling has been conducted to support this evaluation. See response to DEP-17.

DEP-22: “If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted.”

Response: This concern will be addressed as part of the Construction Plan or Soils Management Plan.

DEP-23: “Parties constructing and/or renovating buildings in contaminated areas should consider whether chemical or petroleum vapors in subsurface soils and/or groundwater could impact the indoor air quality of the buildings.”

Response: This concern will be evaluated upon receipt of the soil analytical data. See response to DEP-17.

DEP-24: “All relevant site data, such as contaminant concentrations in soil and groundwater, depth to groundwater, and soil gas concentrations should be evaluated to determine the potential for indoor air impacts to existing or proposed building structures.”

Response: Site data such as contaminant concentrations in soil and depth to groundwater will be evaluated to address this potential issue.

DEP-25: “Particular attention should be paid to the vapor intrusion pathway for sites with elevated levels of chlorinated organic compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE). MassDEP has additional information about the vapor intrusion pathway on its website at <http://www.mass.gov/dep/cleanup/laws/vifs.htm>.”

Response: Four soil samples from two different locations were analyzed for volatile organic compounds (VOCs) and no VOCs were detected, including PCE and TCE. In addition, the Phase I Initial Site Assessment Report (provided in full as an Appendix to the Expanded ENF) did not identify any VOC sites in close proximity to buildings within the project area. Therefore, there are no vapor intrusion pathways for VOCs.

DEP-26: “Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site.”

Response: No disposal sites have yet been identified on the project area. In the event this changes, then this concern will be addressed.

DEP-27: “Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities.”

Response: Options for construction of structures at contaminated sites will be explored and identified, as appropriate.

DEP-28: “Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations.”

Response: Methods to construct clean utility corridors will be incorporated as appropriate.

DEP-29: “The project requires an analysis of the project’s anticipated greenhouse gas emissions under MEPA’s *Greenhouse Gas Emissions Policy and Protocol*. The Massachusetts Clean Energy and Climate Plan 2020 estimates that MEPA project reviews will contribute by reducing approximately 100,000 Metric Tons of CO₂ equivalent by 2020. Therefore, MassDEP encourages the proponent to fully consider opportunities to reduce mobile source GHG emissions in the EIR.”

Response: The Expanded ENF includes quantification of GHG emissions for the No-Build and three Build Alternatives based upon modeling conducted by CTPS. Further quantification and identification of measures to avoid, minimize or mitigate GHG emissions are included in Chapter 6 of the Single EIR.

DEP-30: “The MEPA GHG policy requires that proposed projects comply with the applicable terms of the policy including a quantification of the project’s GHG emissions and the identification of measures to avoid, minimize or mitigate GHG emissions.”

Response: The Expanded ENF includes quantification of GHG emissions for the No-Build and three Build Alternatives based upon modeling conducted by CTPS. Further quantification and identification of measures to avoid, minimize or mitigate GHG emissions is included in Chapter 6 of the Single EIR.

DEP-31: “The EENF includes three alternatives for the project, and it is reported that, on a regional basis, the proposed project, Alternative 1 (Busway to Mystic Mall) provides the greatest air quality improvements when compared with two other alternatives (Appendix E, CTPS air quality analysis). However, the air quality improvements are similar among all alternatives. The project is reported to require an additional eight to ten dual-mode articulated buses. The EIR should quantify the additional GHG emissions that will be generated from the no-build analysis and compare it to the CO₂ generated by the Preferred Alternative that is expected to reduce congestion.”

Response: The Expanded ENF included data that quantified the difference in CO₂ between the No-Build and the Preferred Alternative. The analysis assumed the projected use of additional dual-mode

articulated buses. Additional emissions information associated with the additional eight to ten dual-mode articulated buses is provided in Chapter 6 of the Single EIR.

DEP-32: “The project includes demolition and reconstruction, which will generate a significant amount of construction and demolition (C&D) waste. Although the ENF has not made a commitment to recycling construction debris, MassDEP encourages the project proponent to incorporate C&D recycling activities as a sustainable measure for the project.”

Response: Recycling of waste will be evaluated.

DEP-33: “In addition, the proponent is advised that demolition activities must comply with both Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. Chapter 40, Section 54.”

Response: Demolition activities will comply with the Solid Waste and Air Pollution Control regulations.

DEP-34: “Pursuant to the requirements of 310 CMR 7.02 of the Air Pollution Control regulations, if the ABC crushing activities are projected to result in the emission of one ton or more of particulate matter to the ambient air per year, and/or if the crushing equipment employs a diesel oil fired engine with an energy input capacity of three million or more British thermal units per hour for either mechanical or electrical power which will remain on-site for twelve or more months, then a plan application must be submitted to MassDEP for written approval prior to installation and operation of the crushing equipment.”

Response: Crushing activities will comply, if applicable.

DEP-35: “Asbestos removal notification on permit form ANF 001 and building demolition notification on permit form AQ06 must be submitted to MassDEP at least 10 working days prior to initiating work.”

Response: MassDOT will comply, if applicable. It is unlikely that the project demolition will include the presence of asbestos materials.

DEP-36: “Except for vinyl asbestos tile (VAT) and asphaltic-asbestos felt and shingles, the disposal of asbestos containing materials within the Commonwealth must be at a facility specifically approved by MassDEP, (310 CMR 19.061). No asbestos containing material including VAT, and/or asphaltic-asbestos felts or shingles may be disposed at a facility operating as a recycling facility, (310 CMR 16.05).”

Response: If waste containing asbestos is generated, then the waste will be taken to a facility specifically approved by MassDEP, (310 CMR 19.061).

DEP-37: “In addition, if the demolition project contain asbestos, the project proponent is advised that asbestos and asbestos-containing waste material are a special waste as defined in the Solid Waste Management regulations, (310 CMR 19.061). The disposal of the asbestos containing materials outside the jurisdictional boundaries of the Commonwealth must comply with all the applicable laws and regulations of the state receiving the material.”

Response: MassDOT will comply, as applicable.

DEP-38: “The demolition activity also must conform to current Massachusetts Air Pollution Control regulations governing nuisance conditions at 310 CMR 7.01, 7.09 and 7.10.”

Response: MassDOT will comply, as applicable.

DEP-39: “As such, the proponent should propose measures to alleviate dust, noise and odor nuisance conditions, which may occur during the demolition.”

Response: A plan proposing these measures will be developed prior to the start of the project.

DEP-40: “Again, MassDEP must be notified in writing, at least 10 days in advance of removing any asbestos, and at least 10 days prior to any demolition work.”

Response: MassDOT will comply, as applicable.

DEP-41: “The removal of asbestos from the buildings must adhere to the special safeguards defined in the Air Pollution Control regulations, (310 CMR 7.15 (2))”

Response: MassDOT will comply, as applicable.



Frederick A. Laskey
Executive Director

MASSACHUSETTS WATER RESOURCES AUTHORITY

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December 20, 2013

Richard Sullivan, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
Attn: MEPA Office, Richard Bourre'
Boston, MA 02114

Subject: EOEEA #15124 Environmental Notification Form
Silver Line Gateway, East Boston and Chelsea

Dear Secretary Sullivan:

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Environmental Notification Form (ENF) for the Silver Line Gateway (the "Project") proposed for East Boston and Chelsea. The Massachusetts Department of Transportation (MassDOT), in conjunction with the City of Chelsea and the City of Boston, proposes to extend Silver Line Bus Rapid Transit (BRT) service from South Station and the Seaport District in Boston to East Boston and Chelsea, MA. The Study Area is five miles long and consists of diverse and dense residential and commercial uses. It begins at the Seaport District of Boston, travels through East Boston and the Airport Blue line stop, and crosses Chelsea Creek into the City of Chelsea.

The proposed Silver Line Gateway route consists of the existing Silver Line route and facilities in the Seaport area including the Ted Williams Tunnel to the Airport Blue Line Station, airport service roads, and the new Coughlin Bypass Road, then crosses into Chelsea via the new Chelsea Street Bridge. The study area then extends along the MassDOT-owned former CSX/Grand Junction rail right-of-way across the city, paralleling the south side of the existing Newburyport/Rockport Commuter Rail right-of-way, and eventually to the Mystic Mall on the west side of Everett Avenue.

MWRA's comments focus specifically on issues related to discharge permitting within the Toxic Reduction and Control (TRAC) Department and the potential for Section 8(m) permitting from both the Water and Wastewater Operations Departments.

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TRAC Discharge Permitting

The MWRA prohibits the discharge of groundwater to the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the municipality (Boston Water Sewer Commission and the City of Chelsea). The proposed construction of the Silver Line Gateway Project by MassDOT has access to storm drains; therefore, the discharge of groundwater to the sanitary sewer system associated with this Project is prohibited. MassDOT must secure a US EPA National Pollutants Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from its construction activities associated with this project.

MWRA-1

MWRA-2

If a tunnel is to be constructed as part of this Project, the discharge of seepage or continuous groundwater discharge into the MWRA sanitary sewer system is prohibited pursuant to 360 C.M.R. 10.023(1). Once the Silver Line Gateway Project is completed, and if MassDOT intends to discharge wastewater from a vehicle wash operation to the sanitary sewer system, it must apply for an MWRA Sewer Use Discharge Permit. MassDOT should contact Ken Cunningham, Industrial Coordinator, within MWRA's TRAC Group at (617) 305-5623 for assistance in obtaining this permit. Also, MassDOT is required to have an MWRA Sewer Use Discharge Permit prior to discharging wastewater from the vehicle wash process into the MWRA sanitary sewer system.

MWRA-3

MWRA-4

MassDOT must also comply with 360 C.M.R. 10.016, if it intends to install gas/oil separator(s) in the support shops, vehicle storage buildings, and/or in the vehicle wash building that may be planned for the site. In addition to complying with 360 C.M.R. 10.000, MassDOT must conform to the regulations of the Board of State Examiners of Plumbers and Gas Fitters, 248 C.M.R. 2.00 (State Plumbing Code), and all other applicable laws. The installation of proposed gas/oil separator(s) will require MWRA approval and may not be back filled until inspected and approved by the MWRA and the Local Plumbing Inspector. For assistance in obtaining an inspection for each facility MassDOT should contact Thomas Coffey, Source Coordinator within MWRA's TRAC Group at (617) 305-5624.

MWRA-5

MWRA-6

MWRA-7

Section 8 (m) Permitting

Section 8 (m) of Chapter 372 of the Acts of 1984, MWRA's Enabling Legislation, allows the MWRA to issue permits to build, construct, excavate, or cross within or near an easement or other property interest held by the MWRA, with the goal of protecting Authority-owned infrastructure. MWRA has both water and sewer infrastructure within or adjacent to the project site.

The Project involves new construction components in Chelsea from the Massport employee parking garage at the corner of Central Avenue and Eastern Avenue to the Mystic Mall. The Project will be constructed in two phases. Phase I will include the construction of the busway, three of the four proposed BRT stations, and the replacement of the functionally obsolete Washington Avenue Bridge. Phase II will include the construction of the downtown Chelsea BRT Station, new commuter rail station west of Everett Avenue, the demolition of the existing Chelsea commuter rail, and the construction of the Shared-Use Path.

The study area locus in Chelsea shows MWRA Water Sections 57 and 8 in the immediate area which could be affected by project construction. In addition, there could be another conflict with Sections 46 and 38 if there is new construction related to this Project in those areas of the bridge crossings, and a new parking garage at Eastern Avenue and Congress Street. In addition to the water infrastructure, there may be potential impacts to the wastewater system.

MWRA-8

MWRA-9

MWRA-10

The ENF does not provide enough detail at this point to determine impact. MassDOT should consult with MWRA when project details are better known to assess any potential impacts to the water and wastewater system. MassDOT should contact Mr. Ralph Francesconi within MWRA's Water Permitting Group at (617) 305-5827 and Mr. Kevin McKenna within the Wastewater Permitting Group (617) 305-5956.

MWRA-11

Sincerely,



Marianne Connolly,
Sr. Program Manager
Environmental Review and Compliance

cc: Kattia Thomas, MWRA TRAC
Ralph Francesconi, Water Permitting
Kevin McKenna, Wastewater Permitting

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9.6 Massachusetts Water Resources Authority (MWRA)

MWRA-1: “The MWRA prohibits the discharge of groundwater to the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the municipality (Boston Water Sewer Commission and the City of Chelsea). The proposed construction of the Silver Line Gateway Project by MassDOT has access to storm drains; therefore, the discharge of groundwater to the sanitary sewer system associated with this Project is prohibited.”

Response: The proposed project will not result in the discharge of groundwater to the sanitary system.

MWRA-2: “MassDOT must secure a US EPA National Pollutants Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from its construction activities associated with this project.”

Response: The Contractor will obtain a NPDES general permit for Stormwater Discharge prior to commencing work.

MWRA-3: “If a tunnel is to be constructed as part of this project, the discharge of seepage or continuous groundwater discharge into the MWRA sanitary sewer system is prohibited pursuant to 360 C.M.R. 10.023(1).”

Response: Construction of a tunnel is not part of this project.

MWRA-4: “Once the Silver Line Gateway Project is completed, and if MassDOT intends to discharge wastewater from a vehicle wash operation to the sanitary sewer system, it must apply for an MWRA Sewer Use Discharge Permit. MassDOT should contact Ken Cunningham, Industrial Coordinator, within MWRA’s TRAC Group at (617) 305-5623 for assistance in obtaining this permit. Also, MassDOT is required to have an MWRA Sewer Use Discharge Permit prior to discharging wastewater from the vehicle wash process into the MWRA sanitary sewer system.”

Response: MassDOT does not anticipate the need for any new bus maintenance or wash facility for the Silver Line Gateway service.

MWRA-5: “MassDOT must also comply with 360 C.M.R. 10.016, if it intends to install gas/oil separator(s) in the support shops, vehicle storage buildings, and/or in the vehicle wash building that may be planned for the site.”

Response: MassDOT does not plan to construct any support shops, vehicle storage buildings, or vehicle wash buildings, and therefore does not intend to install any gas/oil separators.

MWRA-6: “In addition to complying with 360 C.M.R. 10.000, MassDOT must conform to the regulations of the Board of State Examiners of Plumbers and Gas Fitters, 248 C.M.R. 2.00 (State Plumbing Code), and all other applicable laws.”

Response: MassDOT will conform, as applicable.

MWRA-7: “The installation of proposed gas/oil separator(s) will require MWRA approval and may not be back filled until inspected and approved by the MWRA and the Local Plumbing Inspector. For assistance in obtaining an inspection for each facility MassDOT should contact Thomas Coffey, Source Coordinator within MWRA’s TRAC Group at (617) 305-5624.”

Response: MassDOT will conform, as applicable.

MWRA-8: “The study area locus in Chelsea shows MWRA Water Sections 57 and 8 in the immediate area which could be affected by project construction.”

Response: The location of MWRA Water Sections 57 and 8 will be considered in project construction.

MWRA-9: “In addition, there could be another conflict with Sections 46 and 38 if there is new construction related to this Project in those areas of the bridge crossings, and a new parking garage at Eastern Avenue and Congress Street.”

Response: The only location where Silver Line Gateway construction will overlap with the MWRA system is in the vicinity of the commuter rail and busway crossing near the intersection of Everett Avenue with Vale Street and Maple Street (MWRA section 57). Project-related construction will occur over an MWRA water line at this location. The Silver Line Gateway project will not be tying into the MWRA water line.

MWRA-10: “In addition to the water infrastructure, there may be potential impacts to the wastewater system.”

Response: No impacts to MWRA systems are expected.

MWRA-11: “The ENF does not provide enough detail at this point to determine impact. MassDOT should consult with MWRA when project details are better known to assess any potential impacts to the water and wastewater system. MassDOT should contact Mr. Ralph Francesconi within MWRA’s Water Permitting Group at (617) 305 -5827 and Mr. Kevin McKenna within the Wastewater Permitting Group (617) 305 – 5956.”

Response: MassDOT will coordinate with the MWRA through the design and construction process. MassDOT will file an 8(m) Permit with the MWRA to address proposed work in the vicinity of the commuter rail and busway crossing near the intersection of Everett Avenue with Vale Street and Maple Street (MWRA section 57).



Smart Growth & Regional Collaboration

December 20, 2013

Richard K. Sullivan, Jr., Secretary
Executive Office of Energy & Environmental Affairs
Attention: MEPA Office
Rick Bourre, MEPA #15124
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Silver Line Gateway Project, MEPA #15124

Dear Secretary Sullivan:

The Metropolitan Area Planning Council (MAPC) regularly reviews proposals deemed to have regional impacts. The Council reviews proposed projects for consistency with *MetroFuture*, the regional policy plan for the Boston metropolitan area, the Commonwealth's Sustainable Development Principles, the GreenDOT initiative, Boston's Complete Streets Initiative, as well as impacts on the environment.

MAPC has reviewed the Expanded Environmental Notification Form (EENF) and supports the request of the Massachusetts Department of Transportation (MassDOT) to submit a Single Environmental Impact Report (SEIR) outlining impacts of this project and proposals for how those impacts might be mitigated. Included as an attachment to this letter are MAPC's questions and comments regarding details of the Silver Line Gateway Project. The questions and comments, which primarily focus on BRT criteria and project coordination, are intended to enhance and strengthen the overall project. MAPC respectfully requests that the Secretary incorporate our comments and questions into the scope for the SEIR.

The Silver Line Gateway Project is an outcome of MassDOT's recently completed Alternatives Analysis, which reviewed the potential benefits, costs, and impacts of high-quality bus rapid transit (BRT) service for Chelsea and East Boston. MAPC recognizes the importance of this new service to the region's transportation infrastructure and considers development of transit services for the neighborhoods along the Silver Line route to be vital. The Silver Line Gateway Project will connect thousands of residents north of downtown Boston with employment opportunities in the rapidly growing Seaport District. Total daily ridership is forecast to be over 8,700 passengers.

This new BRT will improve the livability of neighborhoods along the route, while improving access for jobs for low-income households and persons of color. In particular, Chelsea, which has the highest proportion of transit-dependent residents in greater Boston and the most densely populated residential neighborhoods outside of the City of Boston, will benefit from this project¹. MAPC strongly supports the full implementation of the Silver Line Gateway Project and is eager to see it completed in a manner as timely as possible.

During the alternatives evaluation process, MassDOT analyzed three separate alternatives and chose Alternative 1 (Busway to Mystic Mall), which includes a dedicated busway using an out-of-service rail right-of-way (ROW) and a portion of the active commuter rail ROW to a terminal station at the Mystic Mall. Alternative 1 is projected to have the fastest travel times, largest number of new transit riders, highest overall ridership, and provide the greatest access to jobs and services. At an estimated cost of \$82.5 million, the project will extend the MBTA's Silver Line service to connect Logan Airport, South Station, and the Seaport District with East Boston and Chelsea.

¹ MAPC's current population projections, scheduled to be released in early January 2014, anticipate that Chelsea's population will grow from 35,200 in 2010 to as much as 40,200 by 2030, an increase of 14%. Meanwhile, population in Metro Boston is projected to increase by up to 10% over the same time period.

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The Silver Line Gateway Project will also include the modernization of the Chelsea Commuter Rail Station, which will be relocated to Everett Avenue as part of a new multimodal Silver Line/Commuter Rail Station that will be fully accessible and ADA compliant. Additionally, the project includes the replacement of a functionally obsolete bridge, the Washington Avenue Bridge, utilizes abandoned railroad ROW (preserving capacity on local roadways), and will accommodate a shared-use path. The project will also leverage many recent public investments such as the Chelsea Street Bridge, Massport's Coughlin Bypass Road, the Airport Blue Line Station, and the purchase of the former Grand Junction Railroad ROW, which crosses through the center of Chelsea.

Transit improvements in the study area are well aligned with MassDOT's GreenDOT and mode shift goals, as well as the goals of *MetroFuture* to reduce greenhouse gas emissions (GHG) and convert more trips to transit, walking, and bicycling. Specifically, the Commonwealth also has established a mode shift goal of tripling the share of travel in Massachusetts by bicycling, transit and walking, as well as a statutory obligation to reduce greenhouse gas emissions (GHG) by 25 percent from 1990 levels by 2020 and by 80 percent 2050. The Silver Line Gateway Project advances all of these regulatory and statutory goals.

The project will also serve Environmental Justice (EJ) populations by improving accessibility to jobs in downtown Boston and the Seaport District, as well as encouraging the creation of new jobs near stops on the proposal line in Chelsea.

Thank you for the opportunity to comment on this important project.

Sincerely,



Marc D. Draisén
Executive Director

cc: Jay Ash, Chelsea
Thomas Tinlin, Boston
Scott Hamwey, MassDOT

**Metropolitan Area Planning Council (MAPC) comments on
Silver Line Gateway Project Expanded ENF, MEPA #15124**

Bus Rapid Transit

MAPC strongly encourages the Secretary to ensure, through the MEPA process, that MassDOT follows the Bus Rapid Transit (BRT) Standard, developed by the Institute for Transportation and Development Policy (ITDP). The MEPA interest in this standard derives from the fact that a system that follows the standard can be expected to maximize ridership, reduce congestion, and achieve greater mode shift and GHG-reduction goals than a more limited system.

MAPC-1

The BRT Standard is a design guide and rating system for BRT. It establishes a common definition for BRT, identifies BRT best practices, and provides a scoring system for BRT projects. The scoring system allows BRT corridors to be evaluated for their design and management aspects. In addition to serving as a technical guide for BRT design, the BRT Standard can be used to evaluate existing BRT systems and even certify them as a basic, Bronze, Silver, or Gold rated system.

Characteristics of a strong BRT include:

- Off-board fare collection
- Level platform boarding
- Real-time information
- Signal prioritization
- ADA accessible stations
- High frequency service

More information about the ITDP and the BRT Standard are available on-line at: <http://www.itdp.org/microsites/the-brt-standard-2013/scorecard>.

MAPC-1

Chelsea Greenway/Shared-Use Path

Through the Gateway Cities Program, the City of Chelsea and the Executive Office of Energy and Environmental Affairs (EOEEA) plan to incorporate a new shared-use path which is proposed along the BRT right-of-way (ROW). This \$3 million project will build a three-quarter-mile long green space running through Chelsea's Box District on a portion of the former CSX Grand Junction Secondary Track ROW. The path will run parallel to the Silver Line busway where it can be accommodated.

The shared-use path will provide bicycle, pedestrian, and green space connections in Chelsea's Box District and in the greater Bellingham Hill neighborhood. It will also improve multi-modal connections. The inclusion of the shared-use path will enhance connections among residential, commercial and recreational areas not only for Chelsea residents, but also for nearby areas in adjacent municipalities.

The design of the proposed Silver Line Gateway Project should accommodate the shared-use path where feasible. Specifically, the design is presented in the CSX Right-of-Way Multi-Use Path Feasibility/Conceptual Design Study prepared by FST for EOEEA (June 2011). The multi-use path should be built in tandem with the project where the ROW is shared.

MAPC-2

MAPC's Northern Strand Trail Communities Bicycle and Pedestrian Network Plan (2013) developed in coordination with the City of Chelsea recommends a shared-use path along two sections of the CSX ROW: Second Street to Everett Avenue and Broadway to Eastern Avenue. Bike lanes and signage would link the two separate sections creating a continuous greenway across Chelsea. Furthermore, there is a long term need to connect the shared-use path with the East Boston Greenway, Northern Strand Trail, and Malden River trail system.

MAPC-3

Richard K. Sullivan, Jr., Secretary, Executive Office of Energy and Environmental Affairs
RE: Silver Line Gateway Project, Expanded ENF, MEPA #15124

December 20, 2013
Page 1 of 3

The EENF noted that future bicycle demand along with associated need for bike racks and other amenities has not been determined for the shared-use path. The Secretary should require that this information be completed and reported in the SEIR. MAPC-4

Washington Avenue Bridge Replacement

Replacement of the functionally-obsolete Washington Avenue Bridge will occur as part of the Silver Line Gateway Project. This project, which is included in the Boston MPO TIP for year 2014, will require design and construction coordination. As noted in the EENF, pedestrian access needs to be maintained throughout construction during the Washington Avenue Bridge Replacement. MAPC-5

Chelsea Commuter Rail Station

As part of the Silver Line Gateway Project, the Chelsea Commuter Rail Station will be relocated in order to create a modern station that meets federal and state accessibility guidelines. The new station will serve as a multimodal transit hub. The SEIR needs to provide further design details as planning progresses. MAPC-6

Intermodal Connections

Intermodal connections are an important component of the Silver Line Gateway Project. The SEIR should further explain how intermodal connections will be advanced, particularly for the new BRT stations in Chelsea and the connection to the Blue Line at Airport Station. The Secretary should require significant detail and certainty regarding this connections because improved connections with the rest of the MBTA system will help to maximize ridership, increase mode shift, and reduce GHG emissions. MAPC-7

New BRT Stations in Chelsea

In Chelsea, there will be four new BRT stations —Eastern Avenue, Box District, Downtown Chelsea, and Mystic Mall. Are there plans to adjust MBTA bus routes to provide access to and from these stations? MAPC-8

Connection to the Blue Line at Airport Station

The Silver Line Gateway Project will follow the existing Silver Line route in the Seaport District, before providing a new connection to the Blue Line at Airport Station in East Boston. While there is currently no regularly-scheduled MBTA bus service provided at Airport Station, the proposed configuration of the Silver Line Gateway BRT platform at Airport Station will allow for the possibility for the MBTA to shift or extend other bus routes (e.g., Route 112) in addition to the proposed Silver Line Gateway to serve Airport Station. The SEIR should further address the likelihood of accommodating other connections at Airport Station. MAPC-9

Mitigation Measures

The EENF states that mitigation measures may include but are not limited to: wetland restoration, stormwater management measures, reclamation of railbed soils, alignment adjustments to minimize potential neighborhood impacts, and utility pole relocation. The SEIR should further identify and explain the details of these mitigation measures. MAPC-10

Transit-Oriented Development and Smart Growth

MAPC is excited to see that the implementation of the Silver Line Gateway Project will enhance opportunities for transit-oriented development (TOD) and smart growth. The transformation of the abandoned ROW in Chelsea to a dedicated busway and, at some locations, a shared-use path, will also improve the value of otherwise underutilized property. In particular, there are significant opportunities in the vicinity of the four new BRT stations - Eastern Avenue, Box District, Downtown Chelsea, and Mystic Mall. The proximity of improved transit service to planned development projects such as Waterside Place and Seaport Square in Boston and the FBI Facility in Chelsea is also likely to advance the success of future development. MAPC-11

Some recent MBTA construction projects have not adequately taken into account the needs and prospects for adjacent development. Therefore, MassDOT, in cooperation with the City of Chelsea, should make special efforts to ensure that the location, design, and configuration of the Silver Line BRT stations optimize the opportunity for TOD, ensure walkability among new developments along the line, and create an environment where people will want to live, work, and play. MAPC is prepared to work with both MassDOT and Chelsea on this planning process. The Secretary should require that the SEIR include detailed information regarding these issues. MAPC-12

Vehicle Fleet

The Silver Line Gateway Project will require 8-10 dual-mode articulated buses. The EENF mentions that these buses will need to be replaced in the long-term. What is the anticipated time frame for this? The SEIR needs to explain future plans for how new buses will be acquired to meet the needs of this route and others across the MBTA system.

MAPC-13

MAPC-14

Specifically, will there be a need to establish a nearby off-site maintenance facility for the dual-mode articulated buses? If so, what location(s) are being considered?

MAPC-15

Right-of-Way (ROW) Takings

The EENF mentions that minor ROW takings will be finalized as the project design progresses. Secondary and cumulative impacts associated with the ROW taking (e.g., changes in land use, commercial relocations, and potential loss of employment) should be addressed in the SEIR.

MAPC-16

Wetland Alteration

The EENF shows that the preferred alternative will result in unavoidable impacts to wetlands. Specifically, the proposed project will alter 13,798 square feet of Isolated Vegetated Wetland (IVW). The EENF demonstrates that these wetlands do not meet the criteria necessary to be subject to the Massachusetts Wetlands Act as either Bordering Vegetated Wetlands (BVW) or Isolated Land Subject to Flooding. However, they are under the jurisdiction of the US Army Corps of Engineers and a Section 404 Category II Permit Application will be filed. The EENF acknowledges that more detailed site evaluations will be needed to determine what, if any, mitigation will be required. This determination should be completed prior to and included in the SEIR. If mitigation is required, off-site options should be considered given the limited space available within the project area corridor.

MAPC-17

MAPC-18

9.7 Metropolitan Area Planning Council (MAPC)

MAPC-1: “MAPC strongly encourages the Secretary to ensure, through the MEPA process, that MassDOT follows the Bus Rapid Transit (BRT) Standard, developed by the Institute for Transportation and Development Policy (ITDP). The MEPA interest in this standard derives from the fact that a system that follows the standard can be expected to maximize ridership, reduce congestion, and achieve greater mode shift and GHG-reduction goals than a more limited system.

More information about the ITDP and the BRT Standard are available on-line at:
<http://www.itdp.org/microsites/the-brt-standard-2013/scorecard>.”

Response: MassDOT is well aware of the referenced ITDP BRT Standard and agrees that it is a useful tool for guiding development of the system. MassDOT coordinated with ITDP throughout the Alternatives Analysis and continues to do so during the EIR process and final design of the system.

MAPC-2: “The design of the proposed Silver Line Gateway Project should accommodate the shared-use path where feasible. Specifically, the design is presented in the CSX Right-of-Way Multi-Use Path Feasibility/Conceptual Design Study prepared by FST for EOEEA (June 2011). The multi-use path should be built in tandem with the project where the right-of-way is shared.”

Response: The shared-use path is an integral part of the Silver Line Gateway project between approximately Eastern Avenue and Chestnut Street in Chelsea. It will provide an important mode of access to the proposed BRT stations and its construction schedule will be coordinated with construction of the busway, stations, and corridor landscaping. West of Chestnut Street the right-of-way is constrained and does not have sufficient room for the shared-use path to be adjacent to the busway. Chapter 2 provides updated information about the design of the shared-use path.

MAPC-3: “MAPC’s Northern Strand Trail Communities Bicycle and Pedestrian Network Plan (2013) developed in coordination with the City of Chelsea recommends a shared-use path along two sections of the CSX right-of-way: Second Street to Everett Avenue and Broadway to Eastern Avenue. Bike lanes and signage would link the two separate sections creating a continuous greenway across Chelsea. Furthermore, there is a long term need to connect the shared-use path with the East Boston Greenway, Northern Strand Trail, and Malden River trail system.”

Response: See response to comment MAPC-2.

MAPC-4: “The EENF noted that future bicycle demand along with associated need for bike racks and other amenities has not been determined for the shared-use path. The Secretary should require that this information be completed and reported in the SEIR.”

Response: The City of Chelsea and its consultant are still in the process of identifying potential bicycle demand and need for bike racks and other amenities. At a minimum, sheltered bicycle racks will be provided at each BRT Station.

MAPC-5: “Replacement of the functionally-obsolete Washington Avenue Bridge will occur as part of the Silver Line Gateway Project. This project, which is included in the Boston MPO TIP for year 2014, will require design and construction coordination. As noted in the EENF, pedestrian access needs to be maintained throughout construction during the Washington Avenue Bridge Replacement.”

Response: Design of the Washington Avenue Bridge includes plans for maintenance of pedestrian access across the bridge throughout the construction period. Refer to the Single EIR, Chapter 2 for a description of the planned maintenance of pedestrian access.

MAPC-6: “As part of the Silver Line Gateway Project, the Chelsea Commuter Rail Station will be relocated in order to create a modern station that meets federal and state accessibility guidelines. The new station will serve as a multimodal transit hub. The Single EIR needs to provide further design details as planning progresses.”

Response: The relocated Chelsea Commuter Rail Station will provide direct convenient transfers with the Silver Line Gateway BRT service, as well as with pedestrian, and bicycle facilities, and other local bus routes. Chapter 2 provides an update of the latest conceptual design of the proposed relocated commuter rail station.

MAPC-7: “Intermodal connections are an important component of the Silver Line Gateway Project. The SEIR should further explain how intermodal connections will be advanced, particularly for the new BRT stations in Chelsea and the connection to the Blue Line at Airport Station. The Secretary should require significant detail and certainty regarding this connections because improved connections with the rest of the MBTA system will help to maximize ridership, increase mode shift, and reduce GHG emissions.”

Response: The Silver Line Gateway will connect with commuter rail, Red Line, other Silver Line routes, and local buses at South Station, and will connect with the Blue Line at Airport Blue Line Station in East Boston (both inbound and outbound will serve the Airport Blue Line Station). In Chelsea, the service will connect with local bus routes at Eastern Avenue, Downtown Chelsea, and Mystic Mall and will connect with the Rockport Commuter Rail line at the relocated Chelsea station. The relocated Chelsea Commuter Rail Station will have direct connections with the Mystic Mall Silver Line Gateway BRT station

MAPC-8: “In Chelsea, there will be four new BRT stations – Eastern Avenue, Box District, Downtown Chelsea, and Mystic Mall. Are there plans to adjust MBTA bus routes to provide access to and from these stations?”

Response: Yes, some modifications to existing local bus stops in Chelsea will be implemented to enhance connectivity between such routes and the Silver Line Gateway service.

MAPC-9: “The Silver Line Gateway Project will follow the existing Silver Line route in the Seaport District, before providing a new connection to the Blue Line at Airport Station in East Boston. While there is currently no regularly-scheduled MBTA bus service provided at Airport Station, the proposed configuration of the Silver Line Gateway BRT platform at Airport Station will allow for the possibility for the MBTA to shift or extend other bus routes (e.g., Route 112) in addition to the proposed Silver Line Gateway to serve Airport Station. The SEIR should further address the likelihood of accommodating other connections at Airport Station.”

Response: In 2010, a CTPS study of potential transit uses of Massport’s Coughlin Bypass Road considered the re-routing of the Route 112 from its Wood Island terminus to Airport Station. The MBTA will evaluate this change as part of its upcoming Service Plan.

MAPC-10: “The EENF states that mitigation measures may include but are not limited to: wetland restoration, stormwater management measures, reclamation of railbed soils, alignment adjustments to minimize potential neighborhood impacts, and utility pole relocation. The SEIR should further identify and explain the details of these mitigation measures.”

Response: The Single EIR provides a mitigation chapter (Chapter 8) with details regarding each of the mitigation measures determined as a result of further analysis and design.

MAPC-11: “MAPC is excited to see that the implementation of the Silver Line Gateway Project will enhance opportunities for transit-oriented development (TOD) and smart growth. The transformation of the abandoned right-of-way in Chelsea to a dedicated busway and, at some locations, a shared-use path,

will also improve the value of otherwise underutilized property. In particular, there are significant opportunities in the vicinity of the four new BRT stations – Eastern Avenue, Box District, Downtown Chelsea, and Mystic Mall. The proximity of improved transit service to planned development projects such as Waterside Place and Seaport Square in Boston and the FBI Facility in Chelsea is also likely to advance the success of future development.”

Response: The City of Chelsea has and continues to undertake planning and redevelopment efforts designed to capitalize on improved transit service and access. Property owners in the vicinity of the Silver Line Gateway project have expressed interest in developing mixed-use projects that include residential as well as commercial components critical to TOD and smart growth.

MAPC-12: “Some recent MBTA construction projects have not adequately taken into account the needs and prospects for adjacent development. Therefore, MassDOT, in cooperation with the City of Chelsea, should make special efforts to ensure that the location, design, and configuration of the Silver Line BRT stations optimize the opportunity for TOD, ensure walkability among new developments along the line, and create an environment where people will want to live, work, and play. MAPC is prepared to work with both MassDOT and Chelsea on this planning process. The Secretary should require that the SEIR include detailed information regarding these issues.”

Response: MassDOT worked closely with the City of Chelsea throughout the planning process, particularly on the location, design, and configuration of the proposed BRT stations and the relocated Commuter Rail Station. Close coordination will continue throughout the station final design, construction, and implementation of operations.

MAPC-13: “The Silver Line Gateway Project will require 8-10 dual-mode articulated buses. The EENF mentions that these buses will need to be replaced in the long term. What is the anticipated time frame for this?”

Response: Following their mid-life overhaul in 2014-2015, it is anticipated the existing Silver Line dual mode articulated (DMA) vehicles will be able to operate for at least another 10 years before requiring replacement. The planning and design of the replacement vehicles would need to be initiated several years in advance of the operational need.

MAPC-14: “The SEIR needs to explain future plans for how new buses will be acquired to meet the needs of this route and others across the MBTA system.”

Response: The project is coordinating its longer-term bus fleet requirements with MBTA’s bus procurement process.

MAPC-15: “Specifically, will there be a need to establish a nearby off-site maintenance facility for the dual-mode articulated buses? If so, what location(s) are being considered?”

Response: It is anticipated that the DMA buses used in the Silver Line Gateway service will be maintained at the same maintenance facility at Southampton Street in Boston that currently maintains the existing DMAs in service on the SL1 route.

MAPC-16: “The EENF mentions that minor right-of-way takings will be finalized as the project design progresses. Secondary and cumulative impacts associate with the right-of-way taking (e.g., changes in land use, commercial relocations, and potential loss of employment) should be addressed in the SEIR.”

Response: Potential right-of-way takings are identified in Chapter 8 of the Single EIR. Commercial relocations and employment losses, if they occur, will be documented, as will discussions with the City of Chelsea to avoid, minimize or mitigate potential impacts. Changes in land use are not expected to be

considered as impacts: the City's long-range planning for adjacent areas has anticipated improved transit access.

MAPC-17: "The EENF shows that the preferred alternative will result in unavoidable impacts to wetlands. Specifically, the proposed project will alter 13,798 square feet of Isolated Vegetated Wetland (IVW). The EENF demonstrates that these wetlands do not meet the criteria necessary to be subject to the Massachusetts Wetlands Act as either bordering vegetated wetlands (BVW) or Isolated Land Subject to Flooding. However, they are under the jurisdiction of the US Army Corps of Engineers and a Section 404 Category II Permit Application will be filed. The EENF acknowledges that more detailed site evaluations will be needed to determine what, if any, mitigation will be required. This determination should be completed prior to and included in the SEIR."

Response: MassDOT coordination with the USACOE and MassDEP is ongoing. Chapter 3 provides an update of wetlands permitting and mitigation.

MAPC-18: "If mitigation is required, off-site options should be considered given the limited space available within the project area corridor."

Response: Based on discussions with MassDEP and the USACOE, off-site wetland mitigation is not required.



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WWW.ABETTERCITY.ORG

December 20, 2013

Secretary Richard K. Sullivan
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office, Rick Bourre
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Silver Line Gateway
EEA #15124
Expanded Environmental Notification Form

Dear Secretary Sullivan:

A Better City (ABC) advances infrastructure investments and projects that are vital to sustaining and growing the Boston area's economy and ensuring that Boston remains one of the most dynamic and unique cities in the world. Our Board of Directors is comprised of almost 100 business and institutional leaders throughout the greater Boston area. We have been active participants in the review of transportation improvements in the Urban Ring Corridor since 1993, and currently our Planning Director Thomas Nally is co-chair of the Urban Ring Citizens Advisory Committee.

We are writing in support of the Expanded Environmental Notification Form for the Silver Line Gateway Project referenced above, submitted to your office on November 15, 2013. And we enthusiastically support the concept of the Silver Line Gateway which will, when implemented, provide improved transportation services to an underserved portion of the region where the residents are in need of enhanced mobility and access to places of employment. The concept was developed through a well-executed participation process examining a reasonable range of alternatives that has resulted in a remarkable degree of consensus and support from civic leaders and community members in Chelsea.

The preferred alternative in Chelsea consisting of a busway from the Massport employee parking garage at Central Avenue and Eastern Avenue to a relocated commuter rail station in the vicinity of the Mystic Mall takes advantage of the partially abandoned right of way recently acquired by the Commonwealth from the CSX Railroad to provide rapid service unimpeded by general traffic. This routing not only provides good service to the residential and commercial areas of Chelsea, but will result in air quality improvements and minimal environmental impacts. The portion of the route in East Boston that uses the recently constructed Coughlin Bypass Road provides similar congestion relief and air quality benefits by separating the bus operations from surface traffic in the vicinity of Day Square.

1

TRANSPORTATION • LAND DEVELOPMENT • ENVIRONMENT

Residents of East Boston will also benefit from increased access to jobs, and with Chelsea residents as well as commuter rail users from the North Shore will have improved access and reduced travel time to the Airport Station on the MBTA Blue Line, Logan Airport, the Innovation District in the South Boston Waterfront, and regional and intercity transportation services at South Station in Downtown Boston.

The preferred alternative provides the fastest travel times, highest ridership, and greatest number of new riders of the alternatives studied and was an appropriate choice. Replacement of the Washington Avenue Bridge in a configuration that will facilitate bus movement in the right of way below long advocated by ABC is another important benefit of the proposed project.

ABC-1

In order to implement the project and look toward future operations, MassDOT will need to have available buses that can operate in the tunnels in adequate numbers to meet service headway targets and provide the required reserve of vehicles. The design of the northern end of the busway beyond the Mystic Mall should be designed to allow future further expansion to the west.


ABC-2

Proposed mitigation measures outlined in the EENF appear to address all impacts identified, but additional detail will be necessary in the Single EIR documentation. Construction impacts will largely be confined to areas adjacent to the proposed right-of-way in Chelsea. Mitigation of the anticipated impacts also needs to be described in the Single EIR.

ABC-3

We look forward to review of the next phase of environmental analysis as this worthwhile project advances toward implementation.

Thank you for the opportunity to comment on this critically important project for the communities directly served and for the region as a whole.

Sincerely,

Richard A. Dimino
President and CEO

cc: James Cerbone, Scott Hamwey

6005/l urcltd20

9.8 A Better City (ABC)

ABC-1: “The preferred alternative provides the fastest travel times, highest ridership, and greatest number of new riders of the alternatives studied and was an appropriate choice. Replacement of the Washington Avenue Bridge in a configuration that will facilitate bus movement in the right-of-way below long advocated by ABC is another important benefit of the proposed project.”

Response: The careful design coordination between bridge and busway elements is critical to the success of the Silver Line Gateway project.

ABC-2: “In order to implement the project and look toward future operations, MassDOT will need to have available buses that can operate in the tunnels in adequate numbers to meet service headway targets and provide the required reserve of vehicles. The design of the northern end of the busway beyond the Mystic Mall should be designed to allow future further expansion to the west.”

Response: Refer to the Expanded ENF, Part B, Section 6.5.1.1. The plan calls for utilizing the Silver Line dual mode articulated (DMA) buses currently in the MBTA fleet following their planned mid-life overhaul. There are sufficient DMA vehicles in the MBTA fleet to support both the existing SL1 Airport service and the planned Silver Line Gateway service with sufficient spares. Long-term, the DMA fleet will need to be replaced. The busway and relocated commuter rail station design will not preclude future expansion of the busway to the west.

ABC-3: “Proposed mitigation measures outlined in the EENF appear to address all impacts identified, but additional detail will be necessary in the Single EIR documentation. Construction impacts will largely be confined to areas adjacent to the proposed right-of-way in Chelsea. Mitigation of the anticipated impacts also needs to be described in the Single EIR.”

Response: A more detailed description of construction impacts is provided in Chapter 7 of this Single EIR. Mitigation is summarized in Chapter 8 of the Single EIR.



City of Chelsea

DEPARTMENT OF PLANNING & DEVELOPMENT
John DePriest, AICP, Executive Director
City Hall, Room 101, 500 Broadway
Chelsea, Massachusetts 02150
Telephone (617) 466-4180
FAX (617) 466-4195



December 23, 2014

Secretary Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Rick Bourré, EEA No. 15124 Silver Line Gateway
100 Cambridge Street, Suite 900
Boston MA 02114

Dear Secretary Sullivan,

I am writing to support the above referenced project and the request for a Single Environmental Impact Report (EIR). The Silver Line project grew out of the Urban Ring proposal and having worked for twenty years on behalf of the City to bring the Urban Ring to Chelsea, I am more than happy to see this proposal advance.

CDPD-1

The proposed Silver Line project is of immense benefit for the region. As a transportation project, the Silver line will provide Chelsea residents with direct connections to South Boston, South Station, and the Red Line as a single-seat, 19 minute ride. Today, such a trip takes a minimum of three different modes – bus and two subway rides – and upwards of 50 minutes to an hour. The project also promises to relieve congestion on other MBTA bus lines and the commuter rail line, as riders switch to the more convenient BRT ride.

As an economic development project, the Silver Line promises to support on-going redevelopment projects in the City and to connect Chelsea residents with the jobs in the South Boston innovation District. It also provides more convenient connections to educational opportunities – UMass/Boston, MIT, and Harvard University – on the Red Line.

As a component of the Urban Ring proposal, the environmental impacts of the proposal have been identified in several studies and discussed in numerous public meetings and public hearings. As such, an expanded ENF followed by a Single EIR, should be adequate to evaluate the impacts of the project.

CDPD-2

Thank you for your consideration of my comments. I look forward to working with the project proponent to advance this project through to completion.

Sincerely,

John DePriest, AICP
Director of Planning & Development/
Conservation Agent

9.9 City of Chelsea Department of Planning and Development (CDPD)

CDPD-1: “I am writing to support the above referenced project and the request for a Single Environmental Impact Report (EIR). The Silver Line project grew out of the Urban Ring proposal and having worked for twenty years on behalf of the City to bring the Urban Ring to Chelsea, I am more than happy to see this proposal advance.”

Response: MassDOT welcomes the support of the City of Chelsea. Both the Expanded ENF and Single EIR document the comprehensive public outreach efforts and advocacy of the City of Chelsea.

CDPD-2: “As a component of the Urban Ring proposal, the environmental impacts of the proposal have been identified in several studies and discussed in numerous public meetings and public hearings. As such, an expanded ENF followed by a Single EIR, should be adequate to evaluate the impacts of the project.”

Response: The Expanded ENF and Single EIR reference previous studies in an effort to avoid duplication of previous efforts. This work, supplemented by new, site-specific information, is intended to adequately evaluate the potential impacts of the project.

10 Silver Line Gateway Single EIR Distribution List

TWO FULL COPIES FOR MEPA Secretary Richard K. Sullivan, Jr. Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs Attn: MEPA Office 100 Cambridge Street, Suite 900 Boston, MA 02114	
Massachusetts Department of Environmental Protection / Boston Office Commissioner's Office One Winter Street Boston, MA 02108	Massachusetts Department of Environmental Protection / Northeast Regional Office Attn: MEPA Coordinator 205B Lowell Street Wilmington, Massachusetts 01887
Massachusetts Historical Commission The MA Archives Building 220 Morrissey Boulevard Boston, MA 02125	Massachusetts Coastal Zone Management Attn: Project Review Coordinator 251 Causeway Street, Suite 800 Boston, MA 0211
Massachusetts Bay Transit Authority Attn: MEPA Coordinator 10 Park Plaza, 6 th Floor Boston, MA 02216-3966	Massachusetts Water Resource Authority Attn: MEPA Coordinator 100 First Avenue Charlestown Navy Yard Boston, MA 02129
Massachusetts Department of Transportation Highway Division-District #6 Attn: MEPA Coordinator 185 Kneeland Street Boston, MA 02111	Metropolitan Area Planning Commission 60 Temple Place, 6 th Floor Boston, MA 02111
Boston	
Office of the Mayor Boston City Hall One City Hall Square, Room 500 Boston, MA 02201	Boston Transportation Department Boston City Hall One City Hall Square, Room 721 Boston, MA 02201
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Chelsea	
City Council City of Chelsea Chelsea City Hall 500 Broadway, Room 306 Chelsea, MA 02150	Department of Planning and Development John DePriest, AICP City of Chelsea Chelsea City Hall 500 Broadway, Room 101 Chelsea, MA 02150

City Manager Jay Ash City of Chelsea Chelsea City Hall 500 Broadway, Office #302 Chelsea, MA 02150	Chelsea Public Library Robert Collins City of Chelsea Chelsea Public Library 569 Broadway Chelsea, MA 02150
Commenters	
Boston Water and Sewer Commission 900 Harrison Avenue Boston, MA 02119-2540 Attn: John P. Sullivan, P.E.	WalkBoston Old City Hall 45 School Street Boston, MA 02108 Attn: Wendy Landman
ABC A Better City 33 Broad Street, Suite 300 Boston, MA 02109 Attn: Richard A. Dimino	George Bacon 80 Pleasant Street Ayer, MA 01432